F. N. Wilson

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See also SAUNDERS Announcement on Page 3

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EVOLUTION IN MEDICINE

ERNEST E. IRONS, M.D.
CHICAGO

As we view the accomplishments of the medical departments of the Army and Navy thus far in the war, we are moved with pride in their achievements. To those of us whom time has robbed of the opportunity of again participating in uniform, this creditable performance is a source of deep satisfaction and no little envy. The medical officers today have the advantage of almost thirty years of better professional education, better technical knowledge and methods and, with these, better mechanical appliances and transportation.

It may be of interest to note at this time the course of development of medicine which has led to this great advance in treatment and cure of wounds and disease to see how these observations may apply to the future progress of medical education and practice.

The history of medicine of any period is the history of contemporary economic, social and political conditions. Medicine prospers in discovery and improvement along with other branches of science, and in turn these discoveries reflect similar progress or regression in the social and political life of the times. The social and economic problems encountered in the practice of medicine are not peculiar to medicine and cannot be solved by medicine alone. Bad housing and bad nutrition contribute directly to bad health, but they arise not through any fault of medicine but from bad economic and social situations. And so their cure is to be sought not through a radical change in medical procedure but rather in the remedying of social ills, in which effort medicine will gladly participate. The cure of many a sociologic-medical problem is a grocery order rather than a prescription.

EVOLUTION IN MEDICINE

The advances in medicine as in all science have been achieved as the result of slow accumulation of knowledge. What appears to be a sudden startling discovery in medicine is usually rather the culmination of long patient work in several sometimes distantly related fields. Some small new fact perhaps brings the many elements into focus, and a valuable new method emerges. Vesalius is credited with making the first clinical diagnosis of aortic aneurysm. His enviable accomplishment consisted, however, in recognizing the similarity of the pulsation beneath the shoulder blade of the nobleman Welserus to the pulsation in aneurysms of peripheral vessels, which had been recognized and described by Hippocrates nineteen centuries before. In recent times the discovery of sulfanilamide was conditioned by preceding and apparently unrelated studies on the physiology and growth requirements of bacteria; Fleming's observations on the limitation of growth of bacteria by contaminating mold depended on experiments on the nutrition of bacteria and the effects of diffusible substances unfavorable to their growth; out of these concepts came penicillin.

Medical education began in Europe in the monasteries, then was fostered in the universities; its growth was hindered by superstition and obstructed by laws based on tradition; its tempo of growth became more and more rapid until the present time. The twentieth century has been marked in this country by reforms in the method and content of medical education and the close affiliation of medicine with ancillary science. With this marvelous advance has come a corresponding reduction in mortality from disease and a notable increase in life expectancy. The improvements in medical education and increase in medical knowledge in the past forty years are directly reflected in the increased efficiency of medical care of our military sick and wounded. The whole story of medicine in this country is that of an orderly evolution unrestricted by regimentation or federal interference.

We are now faced with certain proposals which would alter the conditions of medical practice as a part of a larger plan ultimately to revise our entire social and governmental structure. While it is intended here to refer only to the medical aspects of this proposal, it must be recognized that medicine which deals with the health of the people touches closely on their economic and social standards.

History is full of examples of the close interrelation of medicine and social, economic and political life of peoples. Many of our present day problems are merely repetitions in modern setting of identical situations of ancient civilizations. Haskell has reviewed the growth and course of Roman civilization from the founding of Rome, through the Republic, to the fall of the Empire, the establishment of a totalitarian state and finally total disintegration. He has pointed out the remarkable similarity of problems of that period to our own.

It is significant that those who then advocated measures of relief were motivated in part by desire to improve things and in part to satisfy what they conceived to be their personal advantage. Then and now measures of cure of medical as well as of economic

Read before a wartime medical meeting and Regional Meeting of the College of Physicians, Denver, June 24, 1944.

and political illness need to be scrutinized not only as to motive and proposed mechanism but also as to their ultimate affect on medicine or on the state of the future. The Roman Catiline, who in general has been given a bad name, himself espoused the cause of the oppressed masses. He had suffered irritating defeats and injuries; he explained his course by saying " I have undertaken, as is my wont, the public cause of the distressed." But his program had no regard for results beyond the immediate gain or loss of his campaign for consul. When asked as to this, he said "If a fire is lighted against me, I shall put it out not by water but by pulling down the roof of things."

Among the social reformers and political propagandists who would force wide governmental and social changes by an oblique attack on medicine there are too many Catilines who would pull down the roof of medicine in order to carry out other plans looking to a totalitarian state. We shall hope not to be obliged to say, as did Tacitus concerning Roman intellectual life, that "genius died by the same blow that ended public liberty."

We are urged to consider the alleged advantages of socialized medicine under bureaucratic control as provided in several countries elsewhere in the world. But we are concerned with the system of medical care in the United States and not with that of other countries. We must not try to tell them what to do or how to manage their medical economy nor, contrariwise, can we assume that a medical plan which fits their political and economic status would be good for us. Economic, political and social ideals determine the course of all activities in nations just as they do in villages and neighborhoods. These ideals differ, and a medical program will take the pattern of the thought and desires of a people.

Individualization is necessary in dealing with the diverse economic and social conditions in the several portions of this country. Measures in recognition of this evident fact will go far to solve social and medical injustices which unavoidably result from economic privation and inequality. Here in America the central thought of our life and development has been freedom of action—free enterprise. There are now those who would attempt to impose a regulation of medicine as the first step toward a totalitarian system in a nation whose ideology revolts at such a change. They would make the change largely on the ground that there have been instances in our present system in which selfishness has prevented the successful operation of free enterprise and that there have been injustices in the operation of our social system. That there have been such injustices is true: no plan short of a Utopia is perfect, and there is great probability that the rules of Utopia would need revision with changing times.

Medicine along with our entire social thinking is undergoing change for the better, but this orderly though sometimes lagging change of evolution is far different from the change promoted by revolution, with the destruction of standards built up by decades of laborious and idealistic effort.

Certain lay persons and a few doctors blithely recommend socialized medicine, apparently without full knowledge of the inevitable results entailed in its operation. When it fails they will move on to other fields, along with other irresponsible advocates of unsound economic programs, leaving the wreckage behind. Some of them are well meaning and may be said to be contemporaneously sincere; others are motivated by more sinister aims which threaten the very roots of our republic.

SOCIAL SERVICE

There is a group of sincere social workers who are rightly impressed with the social and medical difficulties of the poor and ignorant and are anxious to assist in their relief. They properly take pride in the social gains already achieved among many groups of unfortunates, but in their desire to extend rapidly this beneficent action they naively seize on socialized medicine as a vehicle. They fail to see that by bringing medicine down to an average level they would sweep away many of the standards they themselves have already set up. If there is one activity which requires as much as does medicine the utmost individualization, it is that of the social worker. Her work is based on the sensible solution of each peculiar problem and can never be brought successfully into the regimentation of socialized medicine.

There are many groups of sufferers who as yet have not been reached, but the destruction of present standards and the lowering of the average of the entire group to the level of years ago is a poor way to approach an already difficult problem. It is this destruction of present standards both medical and social that is one of the most vicious features of socialized medicine. Social service, which has accomplished much in the alleviation of distress, should have a care to distinguish between real and false friends.

There are still others who masquerade under the cloak of social service whose purpose is not to improve the lot of the poor but rather to use social service and medicine as a stalking horse to attack the present economic and social régime and set up a bureaucracy entirely foreign to the ideology of America. In their arguments they condemn the medical profession as selfish and obstructive and with superficial sophistries urge a system that they themselves know will not accomplish the ends they outwardly propose.

The falsity of the charge that medicine has done nothing to provide better medical service to the public is evident on reference to the record. This record is enviable but, by reason of its cautious development, lacks dramatic appeal. By utilizing the scientific method this progress has been sound and will endure. To plunge into a revolutionary plan with a specious appeal to the uniformed would be as disastrous to the general welfare as was planned food scarcity and the slaughter of little pigs.

Voluntary insurance against the costs of hospitalization was first broached seriously in the United States some twenty years ago. Today by gradual evolution of the so-called Blue Cross and similar hospitalization plans more than 15,000,000 Americans are insured against this hazard. However, even the Blue Cross hospitalization plan, as in effect today, is far different from the hospitalization plan first proposed. In the course of development of such plans it has been found necessary to protect the hospitals against the abuse of those who

would exploit the hospital as a place for a vacation. It has also been necessary to protect certain highly specialized medical services against exploitation by the hospital and by the patient. Likewise it has been necessary to protect the patient against exploitation by the hospital or by some of the specialistic technical medical services. In the gradual evolution of hospitalization insurance these safeguards have been developed.

More than twenty years ago there were available in the United States individual insurance policies which protected the policyholder against the costs of sickness, surgical operations and hospitalization. The rates for such insurance were prohibitive to all except a few. With the development, however, of more experience, permitting the accumulation of actuarial data, the large insurance companies of the United States have found it possible to develop group insurance against the costs of hospitalization, disability due to illness, surgical and obstetric fees and medical care at rates so reasonable that today more than 18,000 American industries are covered with a total of 20,000,000 policyholders. Within five years one insurance company has written such insurance for 2,700 industrial groups covering 1,650,000 persons; another company has covered 1,500,000 in 2,300 industries, and the numbers are growing daily.

Why could not this have been done before? In addition to the necessary evolution of public knowledge and opinion and of actuarial data, medicine itself had to progress in effectiveness so that an insurance policy might be financially possible to the man of limited means and at the same time be actuarily sound. Hospitals themselves had to become available. In 1900 there were 1,000 hospitals in this country; today there are over 7,000. Methods of medical care had to be improved so that hospital days of illness could be reduced to a workable number.

In 1912 the average hospital stay for appendicitis was eighteen days; now it is eleven days. The average course of lobar pneumonia has been reduced from weeks to days. The case fatality of epidemic meningitis in 1910 was 80 per cent; in 1935 30 per cent; today it is 5 per cent. These are only examples of the general improvement in the quality and effectiveness of medical care, which in turn makes possible readjustment of insurance rates to the point at which they are within the reach of the average worker on a sound actuarial basis.

Finally there are the plans which gradually have been developed by state and county medical societies, including today several plans which now cover tens of thousands of policyholders. All of these plans are recognized as still evolutionary and subject to improvement. It is the traditional American system to develop safe technics by cooperative experimental methods by the people who serve and by those who are served. By the exercise of private initiative with recognition of the right of the individual state and of the federal government to regulate so as to insure actuarial safety, we shall be able to develop in the United States plans so that all workers and their families may be protected by a technic that is still sufficiently American to grant freedom of choice to the worker and to the employer and eliminate any excuse for the intervention of governmental bureaucracy.

The care of the indigent has for many decades been willingly accepted by physicians, and suitable institutions have been created usually under state and local community direction supported by the state and community by taxation and by private funds. The indigent share with others the improvements and advances in medical care, but it is noted that the plans for socialized medicine give scant attention to this group, from whom but little political advantage can be gained.

RURAL AND DEPRESSED AREAS

One of the most urgent problems which American medicine must meet and help to solve is that of the rural area, in which for one reason or another economic and social conditions are bad and medical care is sadly deficient. If doctors could be induced even by subsidies to locate in such places, the quality of care would still be substandard, for the doctor cannot do his best without tools. The solution lies in the planned establishment of hospital centers under county or local control which will give the doctor a place in which he can work satisfactorily and from which medical and hygienic knowledge can diffuse into surrounding communities. These deficient areas are scattered all over this country, and their salvation is a state and economic problem. The doctor will gladly join, but he cannot carry both the economic and the medical burdens alone. The rectification of the social and medical deficiencies in these areas will remove the most important claim to consideration of the advocates of socialized medicine.

The medical as well as the social and economic problem of the immediate and more distant future will be solved by a continuation of the evolution and orderly growth of medicine and social activities.

A definite program looking to the elimination of gross deficiencies in rural and other depressed areas, and the continued advance in medical education and consciousness of social responsibility with maintaining of standards, will go far toward attaining this desirable goal.

The American way of life is to us the most desirable. We have a degree of individual freedom (in spite of minor inconveniences of rationing and taxes) found nowhere else in the world.

Our very national life has been threatened first from the Atlantic and then from the Pacific. We are fortunate in having strong allies whose immediate aims are ours. But our real aim in this war is to maintain our American way of life. This is the reason our soldiers are willing to serve and suffer. And so it is the duty of those of us at home that we preserve for those who fight for us their ideals of freedom and see to it that our doctors in the service return to a free medical world unencumbered by the deadening influence of state controlled medicine and politically dominated practice.

Their military service will be easier and more effective if they are assured that during this war we are preparing for an enduring economic peace with maintenance of educational and medical standards and the preservation of liberty and free enterprise.

122 South Michigan Avenue.

SEPTICEMIA AND PURPURA WITH ADRENAL HEMORRHAGE IN THE ADULT

(WATERHOUSE-FRIDERICHSEN SYNDROME)

A DISCUSSION OF THE ROLE PLAYED BY THE ADRENAL GLAND IN THE PRODUCTION OF THE SYNDROME; REPORT OF TWO ADULT CASES.

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The syndrome of bleeding into the skin and other organs including the adrenals in the presence of a severe septicemia is becoming more frequently recognized by clinicians both here and abroad. At the present time almost 150 cases have been reported, the vast majority being in infants and young children. A careful search of the literature has revealed only 19 instances in adults. A recent epidemic of meningococcic meningitis has given us the opportunity to observe 2 typical instances of this unusual syndrome in adults. With prompt recognition plus intensive specific therapy, more victims of this almost uniformly fatal malady might be saved.

At the present time there remains a great deal of confusion concerning the etiology, the pathogenesis, the role of the hemorrhagic adrenal destruction and the status of the thymolymphatic system in the production of this syndrome. As more cases are being studied and with more information concerning capillary physiology, some of the unknown problems are nearing solution.

Fulminating purpura with bilateral adrenal hemorrhage was described as early as 1894 by Voelcker.[1] In 1898 Garrod and Drysdale,[2] Battin [3] and Andrewes [4] published case reports, which was followed in 1900 by 1 from Talbot.[5] Blaher and Bailey [6] in 1901 reported 4 cases of hemorrhage into the skin and adrenals and suggested that the etiology was a fulminating hemorrhagic smallpox. The same year Little [7] presented 4 cases of his own, with a review of 12 others which he stated were "hitherto unclassified." Waterhouse [8] in 1911 described the syndrome with an accurate picture of the symptomatology and pathology but contributed nothing to the etiology. Most authors credit MacLagan and Cooke [9] in 1916 with being the first to find a specific bacterial agent when they recovered the meningococci in 2 fulminating cases of cerebrospinal fever. It should be noted that Andrewes [10] in 1906 reported this organism in what is perhaps the first bona fide adult case. Friderichsen [11] in 1918 published reports of 2 cases of his own and made an extensive review of 28 others. Since then the syndrome has gradually assumed its present title. Aegerter [12] presented a study of the symptomatology, pathology and etiology in 1936. In his review of 55 collected cases plus 2 of his own he found only 6 in adults, with 70 per cent under the age of 2 years. Since then all reported cases have been in children except adult case reports by Foucar,[13] Simpson,[14] Craster and Simon,[15] Kwedar,[16] Carey,[17] Leone,[18] Drummond and Tooke,[19] Grace, Harrison and Davie [20] and Sharkey.[21]

ETIOLOGY

Investigations to determine the responsible bacterial agent were not as common in the early cases as in later years. In Friderichsen's collection of 30 cases blood culture was reported in only 12 instances, 7 of which were sterile and the remainder included a variety of organisms. Waterhouse's case yielded a sterile postmortem blood and spinal fluid culture, and it was his opinion that cultures were sterile in most cases. Previous to the work of Andrewes and of MacLagan and Cooke in demonstrating the meningococci, bacterial agents cultured from the blood, skin and adrenals included the streptococcus, staphylococcus, pneumococcus, colon bacillus, B. pyocyaneus and the Friedländer bacillus. Blaher and Bailey suggested that the etiology was a fulminating hemorrhagic smallpox; Dudgeon [22] found a Streptococcus aureus in 1 case and a pneumococcus in another. Little demonstrated streptococci in sections of the skin.

After some years of investigation by modern bacterial methods it seems definitely established that the most frequent invading organism is the meningococcus. In a review of this syndrome Sacks [23] states that, since MacLagan and Cooke's report, of 21 cases in which definite etiologic data are included, 60 per cent, or 12 cases, were due to the meningococcus while the others were sterile or showed growths of Streptococcus haemolyticus. Sacks also notes that Bamatter [24] in 1934 found that only four bacteriologic examinations had been done ante mortem. It is the growing opinion

Suggestions and help were given by Dr. Lewis C. Pusch, pathologist, York (Pa.) Hospital.

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of a number of students of this condition that, with an increased number of case studies, Neisseria meningitidis will be indicted as the sole etiologic agent. In our review of the 21 adult cases including 2 of our own the meningococcus has been cultured or reasonably well identified on sections in 16 reports. In the remainder no organism was seen in sections, and cultures of blood and spinal fluid when done had revealed no growth.

At the present time, however, the meningococcus is not universally accepted as the sole etiologic factor. Recently Lindsay and his associates [25] reported 7 cases in children in which the heart's blood culture showed 4 to be positive to Neisseria meningitidis, 2 to Haemophilus influenzae and 1 to Neisseria flava II. In case 2 by Sacks the postmortem culture revealed a pneumococcus type I. The occasional finding of the pneumococcus is of great interest because of its characteristic like that of the meningococcus in producing purpuric skin lesions as shown by Mair [26] and by Julianelle and Reimann.[27]

PATHOGENESIS

The concept that the hemorrhagic destructive lesion of the adrenals is the cause of the dramatic death of the victim has been accepted by most observers for a number of years. That this theory is not tenable is attested by animal experimentation, reports of recoveries and of autopsies on cases in which there was no adrenal involvement or a unilateral cortical lesion.

Adrenalectomized dogs lose appetite and become weak and listless, with vomiting, diarrhea, pronounced depression, feeble pulse and low blood pressure and metabolic rate. These symptoms are faithfully followed by patients with the Waterhouse-Friderichsen syndrome with one important exception, and that is the time that it takes for these features to appear. The onset of the symptoms to the time of death of the patient is usually measured in hours and seldom runs over two days at the most. In adrenalectomized dogs in the average, survival time in 74 subjects was found by Rogoff and Stewart [28] to be seven days. The onset of the changes in the experimental animal is slow and insidious, the subject becoming apathetic and sluggish, weak in the hind legs, then lying prostrate, refusing food and often vomiting. Muscular twitchings and frank convulsions develop, respirations becoming slow and labored and eventually ceasing. In man these identical changes are rapid but complicated with profound overwhelming infection that has produced sepsis and hemorrhagic phenomena.

In the reported cases of recovery in the Waterhouse-Friderichsen syndrome the clinical features are identical with those that are fatal. It is difficult to visualize even mild bilateral hemorrhagic lesions of the cortex which could produce such profound disturbances of the individual and still be able to recover complete function. While it is known that one eleventh to one fourth of one adrenal cortex is sufficient to maintain life in the experimental animal, it is not reasonable to suppose that rapid destruction of the major portion of the cortex will produce the syndrome rapidly, because that is not the case in complete adrenalectomy.

Regeneration of the glands can likewise be eliminated. The MacKays and Addis [29] have shown that hyperplasia of the cortex of one gland does occur after excision of the other, but that it is an inactive process taking nearly three months to develop and requiring most encouraging conditions which are not present when disease is present. As far as rapid destruction of the glands is concerned, regeneration is far too slow and uncertain to play any part in staving off insufficiency. Any process resembling regeneration is seen rarely in company with disease of the organ itself.

The sequence of events in the production of the Waterhouse-Friderichsen syndrome is undoubtedly initiated by a bacterial invasion of the blood stream. That most cases of meningococcic meningitis show a stage of dispersion in the blood stream after a period of local infection in the upper respiratory tract is generally accepted. The cause of the wide hemorrhagic phenomena of the skin, adrenals and many other tissues has been thought to be the direct action of the bacteria or their toxins on the walls of the capillaries.

Removal of the adrenal medulla will produce no definite change in the physiology of the animal, and it has been noted by many investigators that the surgical removal of both adrenal cortices will not produce the symptoms of insufficiency for at least several days. Because of the great rapidity with which symptoms uniformly appear in an apparently healthy individual, it is difficult to ascribe their origin to adrenal insufficiency. However important the adrenal glands are to the economy of the individual, they are just one of the tissues of the victim that manifest this capillary weakness. If the patient would not succumb in such a rapid manner, the loss of the adrenal cortex hormone would present a very serious complication in a few days.

It is our opinion from observation of our 2 cases and the study of a large number of reported ones that death occurs from an overwhelming septicemia with a superinduced profound state of shock. The reason for massive adrenal hemorrhage exciting the interest of most observers is that it has long been known that loss of the adrenal cortical hormone produces fatal disorders of systemic functions that are identical in most features with those of surgical or traumatic shock. However, the duration of the illness is too short for the loss of this hormone to be noted. Aegerter states that, if there is a pronounced fall in the blood sodium concentration, one may assume that death is at least partly due to the collapse following adrenal destruction. With an illness of such short duration the blood serum sodium cannot fall appreciably. Cutler, Power and Wilder [30] point out that in Addison's disease the blood sodium may be within normal limits and sodium balance studies are necessary to determine the abnormality of sodium metabolism. It might also be added that many observers have noted that, in the development of shock of any cause, plasma loses sodium.

The clinical evidence for the concept that adrenal hemorrhage plays little or no part in the rapid death of the patient is furnished by Williams,[31] who has

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observed 17 children with fulminating meningococcic septicemia who came to autopsy. The clinical features of all the cases were much the same, but only 9 of them presented bilateral adrenal hemorrhage. Williams states that it was impossible to predict which of the cases would present adrenal involvement and which would not. In a detailed analysis of the two groups it is apparent that the two groups cannot be separated on clinical grounds. The classic clinical features were identical, as were the necropsy findings, with the exception of the adrenal hemorrhage in 9 of the 17 cases. It is Williams's opinion that adrenal hemorrhage is but an incident in an explosive disease process that overwhelms all bodily resistance.

SYMPTOMATOLOGY

The clinical picture is almost the same in adults as in the more frequently described infants. The patient usually has no prodromal complaints except what seems to be a mild upper respiratory infection. After a few days of mild malaise the serious symptoms appear and progress with alarming rapidity, so that the duration of the disease is measured in hours and not days. Chills, fever, sweating and manifest weakness appear together as the first complaints. General aching with abdominal pain or cramps is quickly followed by profuse vomiting of the stomach contents followed by bile. Cyanosis is usually extreme and appears early and is frequently the sign that attracts the attention of the family to the seriousness of the situation. In a few hours the fever is usually over 102 F., with a rapid, weak pulse and evident hypotension. Petechiae appear over wide areas and rapidly coalesce into large ecchymotic spots with amazing rapidity. The cyanosis plus the purpura usually alarms the family to the degree of obtaining medical advice, because in most case reports the physician seems to be called early in the course of the disease. There is no abnormality of the central nervous system on examination except a toxic delirium, which changes rapidly with convulsions to a deep coma and death.

Laboratory examinations are frequently meager and inconclusive because of the short duration of the disease. There is almost always a rather accentuated leukocytosis, with some shift to the left. Owing to the shocked condition of the patient it is frequently difficult to express a drop of blood from the skin for examination. Smear and culture of the purpuric areas as suggested by W. W. King [32] and by McLean and Caffey [33] often prove of value in isolating the offending organisms, most frequently the meningococcus. The same organism is found in blood cultures in at least 60 per cent of the cases.

Boone and Hall [34] and Kwedar have reported finding the meningococcus in blood smears stained with Wright's stain. Chemical examinations of the blood are those generally found in shock.

Spinal fluid examinations are usually of no value in diagnosis but generally become abnormal in the last hours of the illness if death does not intervene too quickly.

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PATHOLOGY

The pattern of pathologic features is much the same in all cases of infants or adults. The outstanding feature is bilateral adrenal hemorrhage, reported in more than 95 per cent of the cases. These findings vary from microscopic pinpoint hemorrhages to massive bleeding, converting the adrenal into a mass of blood. When severe there is complete destruction of the organ with scattered remnants of the gland remaining. When the bleeding is mild the medulla is usually more involved than the cortex. In 3 of the 55 cases reviewed by Aegerter the bleeding was unilateral and on the right side. The bleeding may extend into the periadrenal fascia, and in 1 case noted by Aegerter the capsule had been ruptured, producing a hemorrhagic peritonitis. The capsule is usually tense and, when opened, resembles a blood cyst grossly. The microscopic picture usually shows a complete replacement of medullary tissue by hemorrhage and only remnants of cortical tissue remaining around the capsule. Bacterial stains frequently reveal the meningococcus in the tissues.

Sections of the purpuric skin lesions show engorged blood vessels in the corium, with occasional small areas of extravasation of blood. Postmortem findings in other organs are not constant; hemorrhage into the serosal cavities and intestinal tract are sometimes found. Pulmonary engorgement and injection of the vessels of the brain are frequently found. Other organs are not remarkable except for the prominence of the thymolymphatic system in the children who have succumbed to this disease. Enlargement of the thymus, lymph nodes, Peyer's patches and spleen has led to a discussion whether there is some relation between this condition and the rapid death of the patient. While some observers believe that the prominence of the thymolymphatic system is too frequent to be coincidental, no evidence of its presence is found in adults, who succumb just as rapidly as children. The definite relation of these findings remains unknown at the present.

REPORT OF CASES

Case 1.—A white man aged 34, of normal health except for a mild upper respiratory infection of three days' duration, on the third day (Dec. 26, 1942) when returning from work complained of weakness, fever and general malaise. He was seen by his physician and found to have a temperature of 104 F. At 5 o'clock the following morning he became unconscious, and the skin became purple and mottled in appearance. During the night he vomited and had severe pains in the back and epigastrium. He was admitted to the York Hospital at 7 a. m. and died at 9:30 a. m. the same day. Physical examination showed that he was well developed and had cyanosis, dyspnea, a restless delirium and a skin that was covered with large areas of purple macules, some of which were confluent. The temperature was 105 F. rectally, the pulse rate 120, the respiratory rate 36 and the blood pressure not obtainable. Other than moist rales at the bases and evidence of shock and sepsis, the physical examination was not remarkable. No laboratory data were obtained because of the short duration of the illness.

Postmortem examination by Dr. Lewis C. Pusch revealed in general that the patient was well developed and very well nourished. The body length was 167 cm., the estimated weight 100 Kg. The face had a diffuse ashen purple-gray hue. The chest and abdomen were mottled with sharply defined, irregularly shaped, largely confluent, nonelevated areas of a purple hue, a few millimeters to several centimeters in diameter, which on section appeared to be due to hemorrhage into the derma. More discrete similar areas were present on the back. The thighs and legs were of a diffuse purple hue.

The pleural and pericardial surfaces of the thorax were smooth and glistening. A few black-reddish brown, circular, scarcely elevated plaques, several millimeters in diameter, were

found in the visceral pleurae, which otherwise was of a dull gray-brown-purple hue. The right lung weighed 660 Gm. The pulmonary vessels were grossly normal. The bronchial mucosa was gray. Calcified foci were found in the tracheobronchial nodes. The pulmonary substance was diffusely spongy, moist and brownish red. The left lung weighed 660 Gm. and resembled the right lung in every respect except that the bronchial tubes did not contain mucus but a reddish brown fluid, and the bronchial mucosa was red-brown. The thymus was inconspicuous.

Fig. 1 (case 1).—Section of adrenal, × 83. Hemorrhagic disruption. Fragments of adrenal parenchyma can be seen in a dark matrix of extravasated blood.

The aorta was elastic; brownish red hemic pigmentation of the intima was noted.

The heart weighed 430 Gm. It was unremarkable on dissection except that the myocardium was somewhat soft.

The peritoneum was smooth and glistening.

The stomach, intestine, biliary tract and pancreas were grossly normal on dissection. The liver weighed 2,225 Gm., had a smooth capsular surface and was brownish gray. The cut surface was the same color, relatively homogeneous and of normal consistency.

The spleen weighed 250 Gm. and was grossly normal on dissection.

The right kidney weighed 195 Gm., the left kidney 300 Gm. The cortical surfaces were smooth and gray. The cortex was 1 cm. thick and gray with striations obscured. The medullas were 2 cm. thick and were red. The renal pelves were grossly normal. A 1.5 cm. cortical cyst was present in the right kidney.

The bladder was grossly normal and contained approximately 100 cc. of clear brownish yellow urine.

Both adrenals were diffusely enlarged. On serial gross sections both were found to be occupied diffusely by diffusely reddish black hemorrhagic infiltration. The dimensions of the right adrenal were 7 by 3.3 by 1.5 cm. and its weight 13.5 Gm.; of the left adrenal 6 by 3.5 by 1.5 cm. and 12.5 Gm.

Microscopic examination by Dr. Pusch revealed that the sternal bone marrow was normal.

There were acute passive congestion and edema of the lungs. The capillaries as well as the arterioles and venules were engorged with blood, and the alveoli in general were partly collapsed, although areas of compensatory emphysema were seen. Within the capillaries the erythrocytes were normal and the leukocytes fairly numerous. The latter consisted chiefly of monocytes, nonsegmented neutrophils and lymphocytes. In an occasional instance groups of eosin stained, ill defined, minute diplococcoid objects of meningococcic morphology were distributed throughout the cytoplasm of both intracapillary and intra-alveolar phagocytic cells. There was also a considerable amount of intracellular brown pigment. Some alveoli were empty, while others were filled with serum, erythrocytes and macrophage cells.

In a bronchial lymph node the capillaries and sinuses as well as the interstices of the lymphatic cords were engorged with blood.

The myocardial fibers were swollen and pale, in part fragmented and in part disintegrated. Within one disintegrated fiber a group of the eosin stained diplococcoid objects noted in the lung were seen; another group occurred within a small patch of fibrin and histiocytes attached to the mural endocardium. An occasional instance of perivascular leukocytic infiltration was encountered, also an occasional small focus of interstitial hemorrhage.

The esophagus, stomach, intestine and pancreas were not remarkable.

Toxic degenerative alteration of the liver was seen in granular cytoplasmic swelling and vacuolation of the hepatic cells, with pyknosis. Leukocytes were numerous in the sinusoids. The diplococcoid bodies of meningococcic morphology noted in the lungs and heart could be found in occasional instances in the liver, occurring in groups, free and intracellularly in hepatic cells and in Kupffer cells. There were also intracellular granules of a brown pigment.

In the spleen acute passive congestion, an increased number of leukocytes in the pulp and questionable reticuloendothelial hyperplasia were observed. Groups of the minute meningococcoid bodies were rather readily found, chiefly intracellularly. There was also a considerable amount of coarsely granular brown blood pigment.

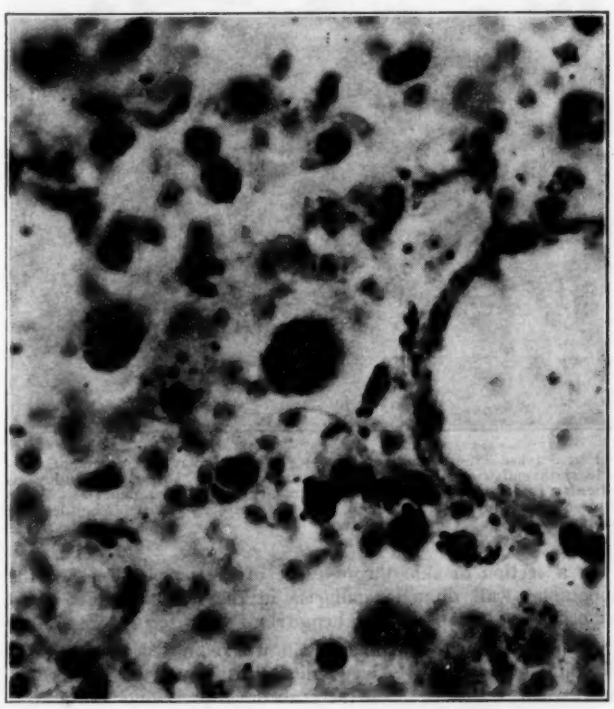

Fig. 2 (case 2).—Section of lung, × 835. Capillary engorgement, as seen in shock, intra-alveolar hemorrhage and blood pigment in macrophage cells within alveoli. Many of the granules undoubtedly are artefacts occasioned by the embalming process. A few intracellular diplococcoid bodies can be seen.

The adrenal glands were diffusely and decidedly hemorrhagic, with structural disruption and disintegration. The hemorrhage was of recent occurrence, without organization or phagocytosis of blood pigment. It extended into the periadrenal fascia. Only an occasional small patch of intact and uninvolved medullary

and cortical tissue was found, chiefly as extracapsular adenomatoid cortical nodules, which in some instances also were destroyed by hemorrhage. Groups of the eosin stained diplococcoid bodies were found also in both adrenal glands, occurring both free and intracellularly in parenchymatous and in phagocytic cells. Multiple sections of the adrenal arteries and veins presented normal structures throughout.

In the kidneys there was granular cytoplasmic swelling of the tubular epithelium. The glomeruli were congested. There were a few interstitial areas of hemorrhage in the medullas.

There were edema and focal lymphocytic infiltration of the bladder, but in general nothing of note was observed.

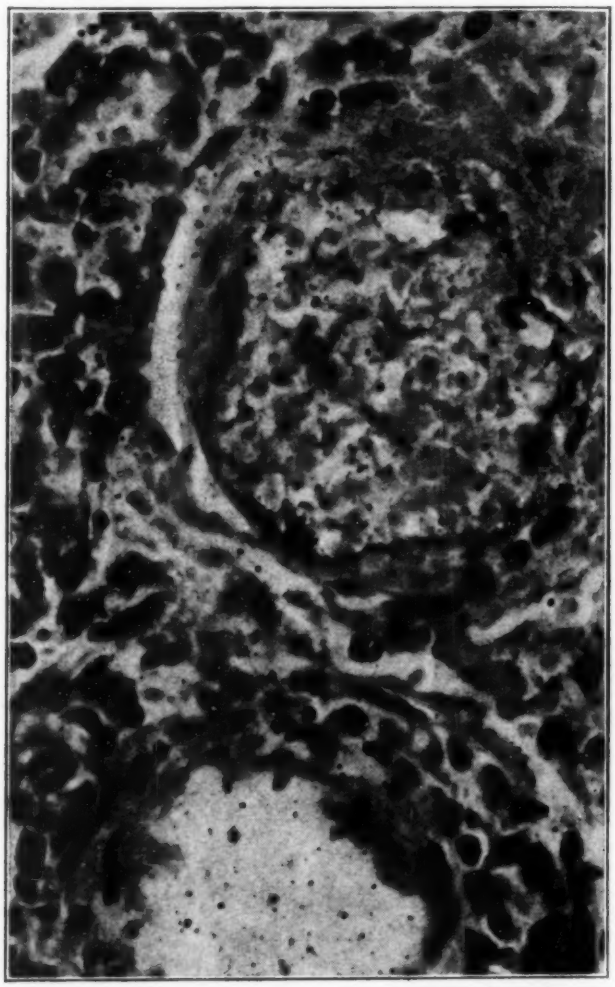

Fig. 3 (case 2).—Section of skin, × 835. Capillary engorgement, vasculitis, thrombosis and hemorrhagic extravasation. Intramural and perivascular infiltrations of granulocytes, monocytes and lymphocytes. Some diplococcoid bodies can be seen, but the majority of the granules are artefacts resulting from embalming.

In a section of skin through one of the purple areas of the abdominal wall dilated capillaries in the dermal papillae and an occasional small area of hemorrhge were seen.

Case 2.—A white man aged 46 was admitted to the York Hospital on May 1, 1943 and died thirty-four hours after the onset of his illness. For several days preceding his illness he noted a mild upper respiratory infection. The night preceding the onset he felt reasonably well except for a mild headache. While at work on the morning of admission he was seized with severe chills, became very weak, vomited a turbid yellow liquid and perspired freely. He went to the first aid station, where his temperature was found to be 105 F. He was admitted by ambulance immediately with a provisional diagnosis of pneumonia. His past medical history was irrelevant.

On admission he was somewhat irrational and slightly cyanotic. He complained of general pains, particularly over the lumbar region. Physical examination was generally unremarkable except for an occasional rale at each base. The temperature was 105 F., pulse rate 110, respiratory rate 30 and blood pressure 130/80. The catheterized urine was normal except for a trace of albumin; the hemogram showed a slight anemia and a leukocytosis of 40,200, with 84 per cent neutrophils, 31 per cent being of the nonsegmented variety.

The platelet count was 273,000 and the spinal fluid was normal. No sputum was obtained. Two successive blood cultures revealed meningococci (type 1). Within five hours after admission the first hemorrhagic manifestations were noted on the back. The patient became more cyanotic, and large ecchymotic areas appeared over the whole body, including the ears, face and extremities. During the period the blood pressure dropped rapidly to 52/20 and remained at very low levels to his death. There was little change in the pulse rate, but the temperature dropped progressively to 99 F. During the last twenty-four hours the patient vomited frequently and was very dyspneic, restless, sweating and cyanotic. He manifested all the symptoms of profound shock. The therapy consisted of plasma, oxygen, epinephrine, saline solution and dextrose by vein and intravenous sulfadiazine. The patient died thirty-four hours after the onset of his illness.

Postmortem examination by Dr. Pusch revealed that the body length was 170 cm. and the estimated weight 80 Kg. The patient was well developed and well nourished, with confluent areas of ecchymosis, dark purple and of irregular configuration, several centimeters in diameter, covering the skin of both arms, back, thighs and legs. The body had been embalmed by arterial injection.

In the thorax there was no free pleural fluid or increased amount of pericardial fluid. There was one fibrous adhesion at the left base. The heart weighed 410 Gm. There was no dilatation. It was unremarkable on dissection, including valves and coronary arteries, except for epicardial petechiae. Each lung weighed 735 Gm. There was a moderate amount of mucus in the right bronchus. Both upper lobes and the middle lobe of the right lung were spongy, moist and brownish gray on section, while the lower lobes were spongy, heavy and blackish red and dark reddish brown. The visceral pleurae were black. There was no appreciable sclerosis of the aorta. The thymus was inconspicuous. The tracheobronchial nodes were moderately enlarged and blackish red and moist on section.

The peritoneum was smooth and glistening. There were no adhesions, ecchymoses nor petechiae. The gastrointestinal and biliary tracts were unremarkable on exploration. The pancreas was grossly normal on dissection. The right adrenal gland measured 6 by 3.5 by 1.5 cm. and weighed 15 Gm. It was diffusely occupied by hemorrhagic infiltration, being dark red-brown on serial cross sections with only a few minute yellow foci of cortical tissue apparent. The left adrenal measured 8 by 3 by 1.5 cm. and weighed 20 Gm. Serial cross sections were in every way similar to those of the right adrenal. The spleen weighed 240 Gm.; the pulp was soft and red. The liver weighed 1,950 Gm. The cut surface was light brown, with visible lobulations. The right kidney weighed 180 Gm., the left kidney 200 Gm. The cortical surfaces were smooth. The cut surfaces were predominantly gray, with ill defined striations.

Microscopic examination by Dr. Pusch of a section of skin from an area of purple discoloration revealed the capillaries engorged with blood, in some instances with associated hemorrhagic extravasation, and with intramural and perivascular infiltrations of granulocytes and monocytes.

The predominant feature of the lungs was that of hemic engorgement of the capillaries, with intra-alveolar hemorrhage and numerous alveolar phagocytes filled with blood pigment, seen chiefly in a section of the lower lobe of the right lung. In this section also were found a few intra-alveolar masses of eosin stained small diplococci. In 1 instance similar structures occupied the cytoplasm of a macrophage histiocyte. There were very few lymphocytes and granulocytes and no appreciable fibrin; free serum was seen. The pleural capillaries were engorged with blood.

A tracheobronchial lymph node showed definite hemic engorgement of the capillaries with large numbers of erythro-

cytes and erythrocytic débris in the sinuses as well as within the lymphatic cords.

Swelling and vacuolation of the muscle fibers of the myocardium, especially subendocardially, were noted.

The aorta was not remarkable at the site of section.

Hemorrhagic infiltration of the adrenal glands occupied a diffuse distribution and extended into the periadrenal fascia, but it was of unequal density, with complete disintegration of most of the structural organization in the sections, while in some areas the structure was well maintained. The cortical and medullary substances seemed to be equally involved. Where destruction was complete a tendency toward polymorphonuclear leukocytic infiltration was apparent. A few clumps of meningococcoid bodies were seen, notable within a dilated capillary in the capsule of the right adrenal, where, enmeshed with a few leukocytes in a ball-like mass of fibrin, they constituted an embolus.

The kidneys showed few areas of hemorrhage, chiefly intratubular. There was moderate tubular dilatation.

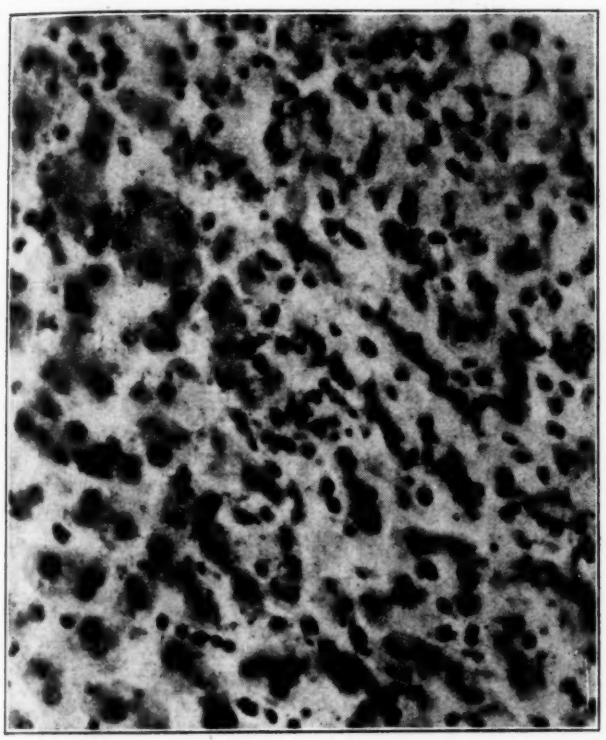

Fig. 4 (case 2).—Section of liver, × 375. Margin of focal necrosis, pyknosis, karyorrhexis, karyolysis and coagulative necrosis of hepatic cells with associated leukocytic infiltration. In sinusoids of bordering viable hepatic tissue leukocytes are numerous.

The spleen showed acute passive congestion, with areas of hemorrhage.

The predominant feature of the liver was the presence of focal necroses, chiefly midzonal within hepatic lobules but also occurring along central efferent venules, attaining a diameter of 0.5 mm. and characterized by acute passive congestion, granular cytoplasmic swelling of the hepatic cells and a considerable amount of brown pigment, which was free, within hepatic cells, and to a less extent within Kupffer cells.

The pancreas exhibited focal toxic cytoplasmic swelling and disintegration of the acinar cells of moderate degree.

TREATMENT

The treatment of this rapidly progressive dramatic malady requires prompt, decisive and heroic measures. With the isolated case, waiting for blood culture reports will mean that the patient has either died or progressed to a point at which therapy is of no avail. When the physician is confronted with an overwhelming septicemia, repeated blood smears should be frequently made in the hope of recognizing the meningococci. If purpuric spots have appeared, a smear of these areas should be made for the same purpose. In an epidemic of meningococcic meningitis specific therapy should begin immediately in all suspected cases.

Review of Adult Cases with a Summary of Available Clinical and Autopsy Findings

No. Author	Year	Age	Sex	Comment
1. Little [7]	1901	22	♂	No laboratory report, along with bilateral adrenal apoplexy and hemorrhagic phenomena there was also tuberculosis of lungs and adrenals
2. Andrewes [10]	1906	53	♂	Meningococcic septicemia
3. Elliot and Kaye: Quart. J. Med. **10**: 361, 1917	1917	Adult	♂	Meningococci in blood and spinal fluid
4. Herrick: Arch. Int. Med. **23**: 409 (April) 1919	1921	21	♂	Meningococcic septicemia; autopsy limited to head
5. Herrick, ibid.	1919	21	♂	Meningococcic septicemia
6. Kessel: M. J. Australia **2**: 456, 1925	1925	30	♂	No laboratory report
7. Middleton and Duane: Am. J. M. Sc. **177**: 648, 1929	1929	18	♂	Meningococcic septicemia
8. Boone and Hall [34]	1935	18	♂	Meningococcic septicemia and gram-negative diplococci on blood film
9. Foucar [13]	1936	20	♂	No laboratory report; sections of brain showed gram-negative intracellular and extracellular diplococci in the cellules of the arachnoid
10. Simpson [14]	1937	Adult	♀	Gram-negative diplococci (meningococci) in smears from spleen; duration was 24 hours; coarse purpuric lesions in mucous membranes and skin with bilateral adrenal apoplexy
11. Craster and Simon [15]	1938	42	♀	Meningococci found in pia-arachnoid at autopsy
12. Carey [17]	1940	27	♀	Patient recovered; meningococci recovered from blood and spinal fluid
13. Grace, Harrison and Davie [20]	1940	20	♀	No laboratory report; autopsy cultures of blood and organs sterile; gram-negative cocci found in kidney tuft
14. Grace, Harrison and Davie [20]	1940	40	♀	Laboratory reports not given; patient recovered
15. Leone [18]	1941	43	♂	No bacteriologic report; no organisms noted in sections
16. Drummond and Tooke [19]	1941	31	♂	Only adult case found in Negro; blood cultures sterile and no organisms found in sections; no hemorrhages in the skin, but diffuse ecchymoses of the conjunctiva, lining of the fourth ventricle, visceral pleura and many other structures
17. Drummond and Tooke [19]	1941	40	♀	Cultures of blood, spinal fluid and heart's blood were sterile; sections showed rare isolated bodies resembling gram-negative cocci
18. Sharkey [21]	1941	40	♀	Eight months pregnant; delivered dead fetus in eight hours; patient recovered; blood culture sterile but complement fixation test positive for meningococcus; no organisms reported in spinal fluid, which contained 21,000 cells
19. Kwedar [16]	1942	58	♀	Meningococci found in blood smear and culture
20. Thomas and Leiphart		34	♂	No laboratory report; diplococcoid bodies of meningococcic morphology in the cytoplasm of phagocytic cells in the lungs; in each adrenal these bodies were intracellular and extracellular
21. Thomas and Leiphart		46	♂	Meningococci present in blood; meningococcoid bodies found in lungs and adrenals

Therapy falls into two natural categories, specific and supportive. Chemotherapy with sulfadiazine in the form of the sodium salt should be given at once. About 0.05 Gm. per pound of body weight is the initial dose

intravenously. The total daily requirement thereafter is approximately the same amount. Efforts should be made to keep the sulfadiazine level to 15 mg. per hundred cubic centimeters. Sulfathiazole is the drug of second choice, followed by sulfapyridine and sulfanilamide. While there is a great deal of dispute about the combination of chemotherapy and serotherapy in the treatment of meningococcic infections, the seriousness of this syndrome makes it necessary to use all the weapons in our possession. There should be no waiting to see if the effects of the chemotherapy will suffice. Polyvalent antimeningococcus serum should be started along with chemotherapy in doses of 50 to 150 cc. intravenously, repeated every six to twelve hours for three doses and daily thereafter if necessary. The use of meningococcus antitoxin in 100,000 units intravenously may be substituted for the serum. We have had no experience with the antitoxin.

Supportive measures include the use of fluids with sodium chloride to combat the dehydration from vomiting and perspiration. With the appearance of hemoconcentration, large and adequate doses of plasma should be used to combat the shock. As there is always deep cyanosis and dyspnea, oxygen should be used early and as long as necessary. The use of adrenal cortex extract in large doses is justified primarily to combat the capillary permeability and only secondarily to replace the destroyed hormone. Adrenal cortex extract is given twice daily in 10 cc. doses or the equivalent dose of the synthetic cortical derivative desoxycorticosterone. One dose of epinephrine may be given; if there is evidence of improvement, this may be repeated. While this drug has been used by several clinicians, there is no evidence that its use is warranted in this condition.

The worth of this treatment is difficult to evaluate. In most cases progressive irreversible changes have probably taken place early in the disease almost before treatment has been instituted. Carey, Grace and his associates and Sharkey have reported recoveries with the treatment as outlined. Harries [35] reported 3 cases of fulminating meningeal infection with imperceptible pulses on admission to the hospital and yet made complete recoveries (ages unknown). Rucks and Hobson [36] report a case in a child with recovery. They also note a case by Bickel [37] with recovery; the details of this case are not available at the present time. Since these recoveries have all occurred since 1940 there is no good reason why a certain number of early or less severe cases should not be given the benefit of all that modern therapeutics has to offer.

SUMMARY

1. The syndrome of severe sepsis with hemorrhagic phenomena is being recognized with greater frequency by clinicians.

2. As more cases are being reported, the meningococcus has been found to be the chief, if not the sole etiologic agent.

3. Adrenal hemorrhage is merely part of the generalized bleeding diathesis and is not concerned per se with the rapid death.

4. These patients die from the effects of severe shock induced by the overwhelming sepsis.

5. It is impossible to predict from clinical and laboratory methods which cases exhibit adrenal hemorrhage.

6. The status of the thymolymphatic system plays no part in the adult cases. As the adults are similar to the juveniles, it may be assumed that it is almost never a factor.

7. Rapid diagnosis can be made by smears of the purpuric areas.

35. Harries, G. E., in Discussion on Modern Methods in the Treatment of Cerebrospinal Fever, Proc. Roy. Soc. Med. **33:** 560, 1940.

36. Rucks, W. L., and Hobson, J. J.: Purpura Fulminans (Waterhouse-Friderichsen Syndrome): Report of Case with Recovery, J. Pediat. **22:** 226, 1943.

37. Bickel, G.: Syndrome de Waterhouse-Friderichsen (Septicémie suraigüe avec surrénalite hémorragique et purpura) terminé par la guérison, Rev. méd. de la Suisse Rom. **60:** 1058, 1940.

PEPTIC ULCER, GASTRITIS AND PSYCHONEUROSIS

AMONG NAVAL PERSONNEL SUFFERING FROM DYSPEPSIA

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This paper deals with the diagnosis of the condition of Navy and Marine patients who present symptoms suggesting chronic disease of the upper part of the gastrointestinal tract. That such a group of patients constitutes a problem among military personnel has been emphasized repeatedly in current medical writings.

Gill,[1] after a thousand gastroscopic examinations carried out in an effort to "determine the value and indications for gastroscopy in the assessment of the service dyspeptic," has confirmed its value by uncovering 102 cases of gastritis in 308 cases in which the roentgenologic observations had been negative. It is surprising that the condition of none of the 806 patients studied was diagnosed as psychoneurotic. Flood [2] made psychiatric studies of 47 of 75 service patients suffering from proved peptic ulcer. Twenty-five presented symptoms of an anxiety state or an anxiety neurosis. No mention was made of patients presenting symptoms in the absence of roentgenologic observations. No gastroscopic study was reported. Rush [3] reported on 200 dyspeptic service patients near the combat area in the South Pacific. In 106 cases no positive objective evidence of organic disease could be demonstrated, and the patients were judged to have functional disorders of the gastrointestinal tract. All of the patients were found to be in a state of either acute or chronic emotional ferment. Gastroscopies were not possible, and Rush expressed the belief that the group may have included some patients whose symptoms were caused by chronic gastritis.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

1. Gill, A. M.: Evaluation of Gastroscopy: Analysis of 1,000 Examinations, Lancet **1:** 333-334 (March 13) 1943.

2. Flood, C. A.: Peptic Ulcer at Fort George G. Meade, Maryland, War Med. **3:** 160-170 (Feb.) 1943.

3. Rush, A.: Gastrointestinal Disturbances in the Combat Area: I. Preliminary Observations on Peptic Ulcer, J. A. M. A. **123:** 389-391 (Oct. 6) 1943; II. Preliminary Observations on Functional Disorders of the Digestive Tract, ibid. **123:** 471-473 (Oct. 23) 1943.

All of these investigations have one serious drawback: they fail to study each patient sufficiently to show whether he had solely a peptic ulcer, gastritis, a psychoneurosis or some other disorder, or whether he had a combination of two or more of these conditions. We believe that any value in the present investigation springs from the fact that all the patients are being studied in the same way, including roentgenologic, gastroscopic and psychiatric studies.[4]

For service patients, the problem of differential diagnosis of the diseases causing the symptoms just mentioned does not differ in any basic way from the problem for civil personnel in peacetime, but there are important minor practical differences. Since these patients are confronted with danger and unhappy maladjustments incident to service, some will knowingly and some unconsciously present symptoms in order to avoid danger or discipline. The similar tendency in civil personnel is less likely to express itself in symptoms because they have wide choice of occupation and are exposed to less danger. Furthermore, a physician in civil life is usually in no position to afford escape for a patient from his environment, whereas service physicians can survey a patient from the service back into civil life. This fact throws a heavy responsibility on the Navy physician, and the Navy owes him the time and the equipment to allow even more exact diagnosis than may be required in civil life. In civil life it is necessary to rule out malignant lesions and to try to relieve symptoms; in service it is also necessary to decide whether a man is to be retained in service.

METHODS (CARRIED OUT IN ALL CASES)

Roentgenologic methods are best suited for finding a duodenal ulcer and both roentgenologic methods and gastroscopy for showing a gastric ulcer, gastroscopy alone is best suited for visualizing various degrees of gastritis, and a psychiatric study is the only orderly way in which to reveal psychoneurotic tendencies. In each instance, roentgenologic examination preceded gastroscopy, so that it would reveal any esophageal lesion that might make gastroscopy dangerous. While the patient was under surface (throat) anesthesia, gastroscopy was performed by one of us (Schindler) by means of the Schindler flexible gastroscope after the stomach had been emptied with a large flexible rubber tube. The validity of gastroscopy for our purposes may be questioned only in that gastroscopy may fail to reveal minor inflammatory changes. A striking correlation between gastroscopic and microscopic observations in cases of gastritis has been demonstrated previously.[5] There is no question that the gastroscope can show the severe, acute, ulcerative form of gastritis reported for civilian patients having duodenal ulcer.[6] Nevertheless it is necessary to admit that misinterpretation of the gastroscopic picture is possible.

All but two of the psychiatric interviews were carried out by one of us (Underdahl). Each patient was studied with a total disregard for the presence or absence of organic disease. In no instance was a psychiatric diagnosis made in the absence of neurotic symptoms or simply because organic disease was not found. Whenever a diagnosis of psychoneurosis was made, it was made because of multiple psychoneurotic tendencies, frequently dating back to childhood. A psychoneurosis can exist in the presence of organic disease, and with this method of psychiatric interview such a case is clearly brought out.

The other methods of study used were (with one exception, the Palmer acid test) those usually employed in the diagnosis of disease of the upper part of the gastrointestinal tract, such as fractional analysis of gastric contents, examination of stools for occult blood and routine examinations of blood and urine. In the performance of the Palmer acid test, the presence and location of pain and tenderness were noted (1) while the stomach was empty, (2) while 200 cc. of 0.3 per cent solution of hydrochloric acid was introduced for fifteen minutes, (3) while the stomach was empty and (4) while 200 cc. of 2 per cent solution of sodium bicarbonate was introduced for fifteen minutes. The complete evaluation of these studies must await the completion of a longer series.

SUBJECTS FOR STUDY

The patients were all of Navy or Marine personnel and can be divided into those who had had sea duty and those who had not. The former had been subjected to rough food, lack of milk and more fried food than is good for some persons and in some instances had had combat fatigue, seasickness, tropical disease and near starvation under unusual combat conditions. The others comprise those who had had duty only in the United States and had had the advantage of a good, regular diet, usually including milk. They correspond to patients of the same age group in civil life except that they too may have been apprehensive of service discipline and future danger. Fairly frequently a proportion of these subsisted at home and had an opportunity to make any needed dietary adjustments.

There is no satisfactory term to cover all the symptoms that the patients may present. Unfortunately "dyspepsia" is a synonym for indigestion in general, and properly used it includes symptoms of the large bowel as well. The symptoms with which we are concerned are those of the upper part of the gastrointestinal tract, anorexia, heartburn, nausea, vomiting and pain in the upper part of the abdomen. The pain is characteristically epigastric, but sometimes it is localized sharply in some spot included in the triangle bounded by the gallbladder, the spleen and the umbilicus. There may or may not be any reference of pain to a shoulder blade or through the body at the level of the origin of the pain. If there is vomiting it may or may not give evidence of bleeding or of obstruction of the upper part of the intestine. Tenderness may occur either at the location of the pain or elsewhere. Fairly frequently there are accompanying symptoms not referable to the gastrointestinal tract. Of these, headache, dizzy feelings, weakness, dyspnea and coldness and sweating of the hands and feet are examples. Less commonly there is idiosyncrasy to certain foods or other suggestive evidence of allergy in the patient's history or in the family history.

The more common diagnoses expected to fall within the scope of this paper are peptic ulcer (duodenal or gastric), chronic gastritis, duodenitis and various psychoneuroses. Because of the young age of most of the patients, mainly 20 to 30 years, duodenal ulcer should predominate over gastric ulcer. Malignant lesions and chronic cholecystitis will be uncommon.

4. We do not know of any report of a similar investigation.
5. Schindler, R., and Ortmayer, M.: Histopathology of Chronic Gastritis, Am. J. Digest. Dis. **9**: 411-415 (Dec.) 1942.
6. Konjetzny, G. E.: Bemerkungen zu W. Fischer: "Einiges über Magengeschwür, Magenkrebs und ihre Beziehungen zueinander," Med. Klin. **37**: 35-36 (Jan. 10) 1941.

RESULTS OF STUDY

The results of the study thus far are not valid statistically and will not be presented now in any detail. Forty-five unselected patients have been studied as outlined. In 23 instances peptic ulcer (duodenal only) was revealed by roentgenologic examination with characteristic deformities, and these comprise group 1. In 22 instances no peptic ulcer was found by roentgenologic examination and none has been found by gastroscopy. These comprise group 2. We are indebted to Commander John Camp (MC), U.S.N.R., who carried out the roentgenologic studies of the gastrointestinal tract.

GROUP 1.—In the 23 cases in which peptic ulcer was demonstrated by roentgenologic examination, a single duodenal ulcer was seen in each instance. Gastroscopy did not visualize any peptic ulcer because none was gastric. There were gastroscopic examinations in all these 23 cases, but in 3 of them gastroscopy was unsuccessful. In 1 case severe gastritis was present, in 5 there was a mild degree of gastritis, in 2 there was questionable gastritis and all of the others were negative. In the case in which there was pronounced gastritis, severe hypertrophic gastritis of the antrum and superficial changes of the lower portion of the anterior wall were seen. In 1 case there was only mild superficial gastritis associated with localized hypertrophic gastritis of the body of the stomach. Only these 2 cases correspond to the frequent cases of severe gastritis combined with duodenal ulcer encountered so regularly in civil practice.

Psychiatric interviews in this group did not reveal any one suffering from severe psychoneuroses at the time of examination, but 2 patients had moderate and 4 had mild neurotic symptoms. Two of these had had a reactive depression and situational neurosis respectively in the past. The remaining 17 patients did not have any neurotic tendencies. There was no apparent correlation between gastritis and neurosis, since in only 1 case were both present. In no instance in this group were the psychoneurotic symptoms severe enough to suggest discharge from the service. One patient was admitted with a diagnosis of gastric neurosis, but subsequently he was found to have three separate organic diseases of the upper part of the gastrointestinal tract (case 1). Psychiatric interview did not reveal any neurotic tendencies. Another patient was admitted suffering from gastric neurosis. After complete study he was found to have a duodenal ulcer as well as a neurotic background.

In each instance in this group the diagnosis, established with reasonable degrees of confidence, was duodenal ulcer.

GROUP 2.—In these 22 cases peptic ulcer was not demonstrated by roentgenologic examination. In no case did gastroscopy visualize an ulcer overlooked by roentgenologic examination. In the cases in which there were varying degrees of gastritis as visualized through the gastroscope, roentgenologic examination had not given any evidence of the gastritis. Gastroscopically, in 11 cases the gastric mucosa proved to be entirely normal. In 2 cases mild hypertrophic gastritis was seen. In 1 case pronounced chronic superficial gastritis of the body of the stomach combined with atrophic gastritis of the antrum was seen. In 3 cases mild and probably insignificant superficial gastritis was observed. However, in 3 cases there was outspoken chronic superficial gastritis. In 2 additional cases a combination of superficial with atrophic gastritis was seen.

Psychiatrically this is a very important group. In 11 cases there was a definite psychoneurosis, mostly of the anxiety and mixed types, sufficiently severe to necessitate discharge from the service. In 3 of these 11 the psychoneurosis was superimposed on a constitutional psychopathic inferiority. Of the remaining 11 patients 6 had mild but very definite neurotic symptoms and only 5 were considered not neurotic, although 2 of the latter were restless and high strung. The diagnoses on admission varied widely, but only 1 of these patients was admitted originally to the psychiatric service. Of the 11 patients who had definite psychoneurosis, 6 had mild to severe gastritis and 5 had normal gastric mucosa. Of the 6 who had mild neurotic symptoms, 2 had gastritis and 4 had normal mucosa. Of the 5 without neurotic symptoms, 3 had mild gastritis and 2 had normal mucosa. One of the latter was suspected of malingering, although this was not proved.

In summarizing the differential diagnoses in this group, it is interesting that among these 22 cases there were 11 in which the diagnosis was made by gastroscopic examination and 9 of the remaining in which the diagnosis was made by psychiatric approach. In the other 2 neither psychiatric, gastroscopic nor any other study afforded a satisfactory diagnosis.

REPORT OF CASES

CASE 1.—*Diagnosis of "intestinal neurosis" changed to diagnosis of three separate organic diseases of the gastrointestinal tract.*

An electrician's mate, second class, aged 40, had been a telephone lineman who ate irregular meals. He had enlisted a year before admission to the hospital and had not had any sea duty. The patient had had laparotomy through the right lower abdominal quadrant in 1926 for "freeing adhesions," in 1932 appendectomy for typical symptoms of appendicitis and in 1938 herniorrhaphy. On one occasion in 1937 he had been awakened by severe pain in the epigastrium extending to the shoulder blades; the residual soreness lasted several days. Since 1939 the patient had had epigastric pain several times a week, a half hour to one hour after each evening meal. The pain was relievable by either food or soda. Later, in 1941, he had controlled all symptoms by eating his meals regularly, but after a drinking bout the pains returned and have continued to the time of writing of this paper except during his several months of boot training.

The patient was admitted to the U. S. Naval Hospital, Corona, Calif., in August 1943, complaining of epigastric burning pain and occasional vomiting. His physical examination gave negative results except for obesity (weight 232 pounds [105 Kg.], height 6 feet 1 inch [185 cm.]) and for the scars of his several operations. The first series of roentgenograms of the gastrointestinal tract was entirely negative, and the roentgenogram of the gallbladder with orally administered dye was negative. Analysis of gastric contents yielded normal values, the highest figure for free acid being 31. At this point, diagnosis of intestinal neurosis was made before a psychiatric interview was undertaken. On the second roentgenogram of the gastrointestinal tract a penetrating duodenal ulcer was observed. No abnormality of the stomach was seen.

Laparotomy was performed, and, in addition to an ulcer 1.5 cm. in diameter in the superior border of the duodenum, the gallbladder was subacutely inflamed, distended with purulent material and filled with small stones. Cholecystectomy was performed. Decision as to the advisability of surgical treatment of the duodenal ulcer was reserved until a later time to note the effect of the cholecystectomy on the patient's symptoms. The stomach appeared normal.

The patient made a satisfactory recovery from the surgical procedure, but for a month and a half after being ambulatory

he had nausea and vomiting after some meals and then, even while he was on a Sippy regimen, his old preoperative symptoms returned. Three stools were negative for occult blood. When a Palmer acid test was performed, the introduction of acid produced epigastric pain which lingered until the alkali was introduced. Gastroscopy revealed severe hypertrophic gastritis. The greater curvature of the antrum showed extensive pathologic changes. At first it protruded like a tumor and, though this bulging disappeared when more air was blown into the stomach, the mucosa still looked swollen and nodular. The mucosa of the sphincter antri was shiny and glistening but had many patches of adherent mucus. Veil-like layers of thin mucus were seen in the lowest portions of the anterior wall. The upper portions of the stomach appeared entirely normal. A third roentgenogram of the gastrointestinal tract did not show any change from the second examination. The duodenal deformity was unchanged, and there was no visualization of gastric pathologic change. A psychiatric interview did not afford any suggestion of neurotic tendencies.

The patient had a duodenal ulcer, chronic cholecystitis with stones and hypertrophic gastritis. Since his dyspeptic symptoms continued unchanged after cholecystectomy and under a subsequent medical regimen for his ulcer, he was surveyed out of the service. The symptoms which continue are caused most probably by the severe gastritis associated with the ulcer. It was thought inadvisable to operate on him for his ulcer because of the mechanical difficulties of performing gastric resection on a patient weighing 232 pounds (105 Kg.), because of the fact that symptoms of the ulcer had existed prior to enlistment and because of the extensive gastritis present.

CASE 2.—*Diagnosis of duodenal ulcer changed to diagnosis of anxiety neurosis.*

A yeoman first class aged 25 considered himself well until March 1943, one and a half years after enlistment, when he began to have pain in the midepigastrium, especially in the late morning and late afternoon and frequently on waking at night. Drinking of milk produced some relief. The pain was brought on by highly seasoned foods. It disappeared for several weeks at a time only to recur for weeks at a time. From June to August the patient was nearly free from pain while following a strict ulcer regimen, but the pain recurred when a special diet was no longer possible. His pain then became intractable during several months of dissatisfaction with a superior officer.

The patient was admitted to the U. S. Naval Hospital, Corona, Calif., in December 1943. Physical examination gave negative results except for slight, questionable epigastric tenderness. He was in a good state of nutrition; he failed to respond to a Sippy regimen. On admission a series of roentgenograms of the gastrointestinal tract did not show any abnormality; a roentgenogram of the gallbladder with orally administered dye was also negative. No abnormality was found by gastroscopy, gastric analysis or the Palmer acid test.

The psychiatric interview and an interview with a parent yielded important information. Throughout childhood the patient had been shy and moody. He talked and walked in his sleep. On seeing a dead friend he became violently ill for a week. Later he wanted to study medicine but was again violently ill for a week after dissecting a cat. Fairly frequently he was depressed and felt that he might as well be dead. On the spur of the moment, a few days before he was to be married, he sent a telegram to his fiancée saying it was all off. He has never made further marital plans. The patient enlisted six months before Pearl Harbor but, with some college training, had hoped to be an officer and chafed under orders of a Wave officer in his department. In addition to the epigastric distress, periodic headaches developed. He also became more dissatisfied, nervous, worried and irritable. He frequently stated that he wanted to be discharged from the service. On sick leave from the hospital his epigastric pain became severe but he did not seek any medical aid. On returning from leave, though he was neat, clean and well nourished, he was irritable, critical, restless and apprehensive and frequently bit his finger nails.

The diagnosis was changed to anxiety neurosis (superimposed on emotional instability), and the patient was informed that he was to be surveyed out of the service. From then on, although he has remained as a patient for more than a month while his papers were being cleared, he has complained less of pain while having a regular diet. However, he has been undependable in his work and has shown some irritability as before.

CASE 3.—*Extensive superficial gastritis and mild psychoneurosis in a case of constitutional psychopathic inferiority.*

A seaman first class aged 31 in the Coast Guard Service enlisted in June 1942 and did not have any overseas duty. He stated that he had had a "nervous stomach" all his life but he first complained of epigastric pain in October 1942. There was a past history of heavy drinking and excessive use of tobacco. The patient occasionally vomited and according to his story sometimes had blood in his stools. The pain centered in the epigastrium, but a separate gas pain, somewhat relieved by belching, tended to be in the left flank. Hot or cold drinks taken between meals aggravated the pains. There was little or no periodicity of the pain.

By August 1943 the epigastric pain became intense, and the patient was admitted to the U. S. Naval Hospital, Corona, Calif., on Dec. 29, 1943. Physical examination gave negative results except for a tremor of the extended fingers, voluntary rigidity throughout the abdomen, mild pes planus and external and internal hemorrhoids. The patient was restless and mildly apprehensive. Two series of roentgenograms of the gastrointestinal tract were negative. By proctoscopy the rectum and sigmoid were normal. There was no anemia, and three stools were negative for occult blood. Analysis of gastric contents showed distinct hypochlorhydria. The highest free acid figure was 8. (A test meal was used, but histamine was not used.) At gastroscopy striking changes were seen in the mucosa of the fundus. Everywhere there were thin layers of grayish, adherent mucus between and under the folds of the gastric mucosa. A diagnosis of extensive superficial gastritis was made.

Psychiatric interview afforded a separate diagnosis. Born to a family in which the father was rarely at home, the boy had frequent temper tantrums, was shy and irritable in crowds and was subject to moody spells. He lived in the tough part of town, had sexual intercourse from the age of 13 years and had gonorrhea several times. At the age of 14 years he started riding the freight trains. The expected subsequent career was interrupted only temporarily by an unhappy time in military school and public schools until he completed the twelfth grade. Since then the patient has been an admitted "bum," working seasonally in resort hotels, drinking, smoking three packages of cigarets a day and living with various women. At each place of employment he was restless and "sick and tired of it" and soon had to quit and move on. He was always introspective and was quickly aware of, and concerned about, any symptoms. During nervousness the patient had frontal and suboccipital headaches. His intelligence quotient is high; he writes a little, but not for publishing, thinks individually, is rather philosophic in his injudicious treatment of himself and has avoided crime because of the unpleasant sequelae. He has an excellent insight into himself and very much regrets not having studied for a profession. In addition to having chronic gastritis, this man has a psychoneurosis superimposed on a constitutional psychopathic inferiority.

SUMMARY

Forty-five consecutive patients of the naval service presented themselves at the U. S. Naval Hospital, Corona, Calif., with a variety of complaints referable to the upper part of the gastrointestinal tract. On the basis of symptoms and observations this group was divided into two classes: those that had a duodenal ulcer demonstrable by roentgenologic examination, and those that did not have an ulcer so far as could be seen by roentgenologic examination. In addition to the usual routine procedures employed in establishing the correct diagnosis, gastroscopy was performed on all of these patients and they were given a psychiatric interview.

Using this approach to the problem it was observed that, in the group of 23 patients suffering from duodenal

ulcer shown by roentgenologic examination, gastritis and psychoneurosis were not common. In the other group of 22 without roentgenologic evidence of duodenal ulcer, nearly 80 per cent had some degree of psychoneurosis and 50 per cent had some degree of gastritis.

From this small series of patients it would appear that the usual subject suffering from a duodenal ulcer is not in need of a gastroscopic or psychiatric examination unless such an examination is specifically indicated. However, in making the final diagnosis for the group not having a duodenal ulcer it is apparently very necessary to utilize both gastroscopy and a thorough psychiatric interview.

NEUTRALIZATION OF THE VENEZUELAN ENCEPHALOMYELITIS VIRUS BY HUMAN SERUMS

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AND
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CARACAS, VENEZUELA

A few years after Meyer, Haring and Howitt [1] isolated the western equine encephalomyelitis virus and TenBroeck and Merrill [2] showed its difference from the eastern encephalomyelitis strain, reports about similar agents in South America began to appear. In 1935 Rosenbusch [3] in Argentina described an encephalomyelitic virus resembling the western strain. The encephalomyelitis viruses found in Peru [4] and Chile [5] are considered to be of the same type. In Brazil some neurotropic viruses of equine origin were also isolated, as, for example, that from Bahia.[6] Nevertheless, the immunologic and pathologic characters of the last mentioned rank it better among rabies viruses.[7] As to Venezuela, the equine encephalomyelitis began to spread in 1936 and the corresponding virus was isolated by Kubeš and Rios [8] in 1938. This virus proved to be decidedly different immunologically from both the western and the eastern encephalomyelitis strains [9] and also from the rabies virus.[10] The same type of virus was found also in Colombia [11] and on the island of Trinidad.[12]

Whereas the importance of the western and eastern encephalomyelitis virus in the etiology of human encephalitides is by now established beyond any doubt, there were until recently no reports on the transmission of the South American viruses to man, though the possibility of this was suspected many times. So, for example, Casella [13] in Argentina mentioned the coincidence of some encephalitis cases in children and adults with the equine encephalomyelitis epizootic registered in 1941 in the Cordoba province. In 1935 Albornoz [14] in Colombia reported cases of human encephalitis in relation to the equine encephalomyelitis ("peste loca de las bestias") in the department of Huila. Similar observations were made by Herran in the Colombian Goajira. Nevertheless, Soriano Lleras [15] could not prove any neutralizing antibodies for the Venezuelan type of equine encephalomyelitis virus in the serums of 6 persons who had recovered from encephalitis.

As to Venezuela, though several accounts exist about persons falling ill after having handled encephalomyelitic animals, it never occurred in such a form as to be able to draw the attention of public health authorities. For this reason there is so far no evidence available concerning cases of encephalomyelitis among country people. It must be presumed, of course, that this kind of infection does occur quite frequently as a result of the high contagiousness for man which the Venezuelan encephalomyelitis virus was found to possess in laboratories, and, on the other hand, as a result of the large extension of Venezuelan territory where the illness is widespread among equines.

The first report on a laboratory infection with the Venezuelan encephalomyelitis strain V-1938 [16] came from the Rockefeller Institute, New York (Casals, Curnen and Thomas [17]). The disease took a mild and inconspicuous course in 2 laboratory workers. From the nose and throat washings, and from the blood of 1 person the Venezuelan virus was isolated, and the serums of both persons contained a high amount of specific antibodies.

Another human infection with the Venezuelan encephalomyelitis virus [18] occurred in the Laboratory of Yellow Fever Research Service, Rio de Janeiro, Brazil (Lennette and Koprowski [19]), where 8 persons fell ill a few days after having handled boxes with suckling mice inoculated with the Venezuelan virus. The authors assume that the infection in this case was due to the aspiration of dust from wood shavings in the boxes, contaminated by the blood and carcasses of little mice partially devoured by their mothers. Although in two persons the illness was rather severe, with signs of some disturbances of the central nervous system, in the 6 others it followed a mild and uneventful course. The Venezuelan encephalomyelitis virus was found in the blood of 6 of the persons, and the serums of all 8 persons had high neutralizing antibody titers.

In view of these reports, we considered it important to ascertain whether some laboratory infections have not also occurred in the Institute for Veterinary

From the Institute of Veterinary Research.

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8. Kubeš, V., and Rios, F. A.: The Causative Agent of Infectious Equine Encephalomyelitis in Venezuela, Science **90**: 20-21 (July 7) 1939.
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10. Kubeš, V., and Gallia, F.: Fenomeno de para-inmunidad entre los virus de la encefalomielitis equina y de la rabia paralítica de Venezuela, Bol. d. Inst. invest. vet. **1**: 81-98 (Nov.) 1942.
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14. Albornoz, J. E.: La peste loca de las bestias (enfermedad de Borna), Bol. de agric., May 1935, supp. 26, pp. 5-8.
15. Soriano Lleras, A.: Nota sobre encefalomielitis equina en Colombia, Bol. Inst. nac. hig. Samper Martínez, October 1943, no. 11, pp. 3-5.
16. This strain was sent by our institute to Dr. J. R. Paul (Yale University School of Medicine) and he submitted it to the Rockefeller Institute, New York.
17. Casals, J.; Curnen, E. C., and Thomas, L.: Venezuelan Equine Encephalomyelitis in Man, J. Exper. Med. **77**: 521-530 (June) 1943.
18. This strain is the same as the foregoing. It was sent by our institute to Beck and Wyckoff (Lederle Laboratories) in 1938. The latter forwarded it to Cunha at Rio de Janeiro, who in turn shipped it to Lennette and Koprowski.
19. Lennette, E. H., and Koprowski, H.: Human Infection with Venezuelan Equine Encephalomyelitis Virus, J. A. M. A. **123**: 1088-1095 (Dec. 25) 1943.

Research, where several persons have been working for about five years with the same V-1938 encephalomyelitis strain that was the causative agent of the aforementioned 10 human cases. For this reason we carried out the serum neutralization test with the serums of various employees in our institute, presuming that the evidence of antibodies against this virus could be considered a proof of a previous infection which passed clinically unnoticed.

TECHNIC OF SERUM NEUTRALIZATION

In all, 16 human serums were tested, 13 of which were taken from persons working in the Institute for Veterinary Research and the 3 remaining ones from country people. All persons were men.

The serums were tested against the original V-1938 encephalomyelitis strain isolated in 1938 and since then used for the elaboration of chick embryo encephalomyelitic vaccine. In order to eliminate possible individual oscillations of the virus titer, a 20 per cent suspension in saline solution was prepared from the brains of 6 mice inoculated with the virus forty-eight hours previously. From the supernatant part of this suspension, drawn off after a centrifugation at 1,000 revolutions per minute for ten minutes, serial hundredfold dilutions in saline solution were prepared, and to 0.5 cc. of each dilution the same amount of the serums on test was added, making a series of final dilutions of the virus ranging from 10^{-2} to 10^{-18}. After an incubation for two hours at 37 C. in a water bath, the serum-virus mixtures were inoculated intracerebrally (0.03 cc.) into 4 week old Swiss white mice. Surviving mice were discarded after fourteen days of observation.

EXPERIMENTAL

The 16 persons on test may be divided into five groups according to the degree of contact they have had with the encephalomyelitis virus.

Group 1 consists of 4 employees of the institute, all of them having been in continual contact with the virus for some years: three of them (A. D., A. R., A. Q.) have been elaborating the chick embryo encephalomyelitis vaccine for two and five years respectively, and the fourth one, a caretaker, has for more than five years handled mice, guinea pigs and rabbits inoculated with encephalomyelitis virus.

The three laboratory technicians (J. M., P. Ch., A. L.) of group 2 who formerly worked with the virus (elaboration of vaccine) have now not had, for two and three and one half years respectively, any contact with the virus.

Neither of the 3 employees of the institute (C. P., M. C., N. M.) in group 3 worked with the encephalomyelitis virus systematically. The laboratory technician C. P. helped two years ago, at one time or another, in the elaboration process of the encephalomyelitis vaccine. The person M. C. performed for the space of a month the postmortem examinations on 13 encephalomyelitic horses during the encephalomyelitis epizootic in the summer of 1943. The third person of this group, N. M., has for three years been bottling the formaldehyde inactivated encephalomyelitis vaccine and has never worked with the active virus.

The serums of the 6 persons of groups 4 and 5, who had never come into contact with encephalomyelitis virus, served as control negative serums for the other three groups. Three of these persons are employees of the institute and the others are peasants living in the vicinity of the institute, where some cases of equine encephalomyelitis among horses have been observed.

Details and Results of Neutralization Tests

Group	Serum: Person	Mice Inoculated Intracerebrally (0.03 Cc.) with Serum-Virus Mixtures; Dilution of V-1938 Virus: 10^{-2}	10^{-4}	10^{-6}	10^{-8}	10^{-10}	10^{-12}	10^{-14}	10^{-16}	10^{-18}	Titer of Virus †	Neutralization Index ‡
1	A. D.	4/4*	3/4	1/4	0/4	0/4	0/4	...	...	...	$10^{-5.0}$	$10^{-11.0}$
	A. R.	4/4	2/4	1/4	0/4	0/4	0/4	...	...	...	$10^{-4.40}$	$10^{-11.60}$
	A. Q.	4/4	4/4	1/4	0/4	0/4	0/4	...	...	...	$10^{-4.84}$	$10^{-11.16}$
	M. F.	3/4	4/4	0/4	0/4	0/4	0/4	...	...	...	$10^{-4.75}$	$10^{-11.25}$
2	J. M.	4/4	3/4	0/4	0/4	0/4	0/4	...	...	...	$10^{-4.67}$	$10^{-11.33}$
	P. Ch.	4/4	4/4	1/4	0/4	0/4	0/4	...	...	...	$10^{-5.33}$	$10^{-11.67}$
	A. L.	4/4	1/4	0/4	0/4	0/4	0/4	...	...	...	$10^{-3.33}$	$10^{-12.67}$
3	C. P.	4/4	4/4	0/4	0/4	0/4	0/4	...	...	...	$10^{-5.0}$	$10^{-11.0}$
	N. M.	4/4	2/4	0/4	0/4	0/4	0/4	...	...	...	$10^{-4.0}$	$10^{-12.0}$
	M. C.	4/4	3/4	1/4	0/4	0/4	0/4	...	...	...	$10^{-5.0}$	$10^{-11.0}$
4	W. R.	...	4/4	4/4	4/4	4/4	4/4	4/4	4/4	0/4	10^{-16}	0
	A. G.	...	4/4	4/4	4/4	4/4	4/4	4/4	3/4	0/4	10^{-16}	0
	E. F.	...	4/4	4/4	4/4	4/4	4/4	...	...	...	10^{-12}	0
5	N. G.	...	4/4	4/4	4/4	4/4	4/4	4/4	4/4	...	10^{-16}	0
	E. C.	...	4/4	4/4	4/4	4/4	4/4	3/4	4/4	0/4	10^{-16}	0
	J. S.	...	4/4	4/4	4/4	3/4	3/4	4/4	4/4	0/4	10^{-16}	0

* The denominator signifies the number of mice injected and the numerator the number of mice which died.
† Fifty per cent endpoints estimated according to the method of Reed and Muench (Am. J. Hyg. **27**: 493 [May] 1938).
‡ Ratio between the titer of virus mixed with each of the immune serums and the titer of virus mixed with control serum.

The details and results of the neutralization tests are presented in the accompanying table. It is apparent that the serums of all persons who at any time worked with the encephalomyelitis virus contained specific neutralizing antibodies (the 10 persons of groups 1, 2 and 3). The amount of antibodies in the serums was sufficient to reduce the titer of the virus, which, in the presence of normal control serums, has been 10^{-16}, to 10^{-5}-$10^{-3.33}$, indicating an exceedingly high neutralization index of 10^{-11}-$10^{-12.67}$. On the other hand, control serums of persons who never came into contact with encephalomyelitic material did not even show any traces of neutralizing antibodies, because the titer of the fresh virus in saline solution, which has been 10^{-18}, dropped, after contact with normal serums, to only 10^{-16}. This may be easily explained by the attenuation of the virus by the warmth of the water bath.

The experiment further demonstrated that the amount of antibodies was practically equal in the serums of persons who have been working systematically and for a long time with the virus (groups 1 and 2) as well

as in the serums of persons who only occasionally came into contact with the virus (group 3). Of still greater interest is the fact that even a long period of contact with the encephalomyelitic vaccine, i. e. with inactive virus, was able to promote a considerable immune response in the person concerned (N. M., group 3).

The cases of group 2 give evidence that antibodies, once present, persist in the serum for a long time in the same intensity. Serums of persons who have not worked with the virus for the last two and three and one-half years showed the same virus neutralizing power as did the serums of persons who have been working with the virus uninterruptedly for various years (group 1). However, it is noteworthy that the serum of P. Ch., who stopped working with the virus three and one-half years ago, has also had the least—though still considerable—amount of neutralizing antibodies of all the serums on test, and a neutralization index of $10^{-10.67}$.

The persons whose serums demonstrated high neutralizing antibody titers have in their records no evidence of any special clinical manifestations which could lead to a suspicion that they were suffering from a disease caused by the encephalomyelitis virus. Nevertheless, in view of recent reports by Casals and his collaborators [17] and by Lennette and Koprowski,[19] the possibility must be considered that our subjects did suffer from an encephalomyelitis infection which, owing to its mild course, has been confused with a current infection of grip. Only in 1 of our persons (M. C., group 3) was there some evidence that he might have become infected when performing the postmortem of 13 encephalomyelitic horses. His illness began a few days after the last autopsy with a severe headache, a high fever and nausea, which, according to his statement, persisted for three to four days. He was bled on the fifth day of the illness, when the headache disappeared and the temperature returned to normal. Though no virus could be isolated from his blood, his serum contained neutralizing antibodies for the Venezuelan encephalomyelitis virus. The neutralization index was higher than 10^{-3} but its exact limit was not determined at the time.

COMMENT

The recent communications by Casals and his collaborators [17] and by Lennette and Koprowski [19] concerning 10 cases of disease in man caused by the Venezuelan encephalomyelitis virus bring clear evidence of the high infectivity of this virus for man. However, the course of this infection in human beings appears to be much milder than that produced by the western and eastern encephalomyelitis virus. This mild course of the illness is probably the reason why, up to now, there have not been any reports on proved cases of encephalomyelitis in man from the areas where the Venezuelan virus is prevalent in horses. A striking feature of the present study is the high neutralizing antibody titers of the positive serums. They neutralized approximately 100 billion minimum lethal doses of the Venezuelan virus. The serums tested by Casals and his collaborators and by Lennette and Koprowski showed a lower, though still very considerable, neutralizing power. This amount of antibodies is certainly higher than that generally produced in human serums due to an infection with both the western and the eastern virus. Though this is probably a consequence of special immunologic characters of the Venezuelan virus, the influence of the very high titer of the Venezuelan virus in this phenomenon must also be considered, since, in a recent study, we [20] were able to verify that, the higher the titer of the virus, the greater the number of lethal doses withstood by immunized mice; and it is precisely the Venezuelan virus which has the highest titer of the three viruses mentioned. On the other hand, it must be said that when we, on previous occasions, tried to produce an encephalomyelitis immune serum by means of repeated inoculations, even of the active virus V-1938 into donkeys, the serum had only a very low neutralizing antibody titer.[21]

As to the way in which people working with encephalomyelitic material become infected, there seem to exist various possibilities. The respiratory route of infection, described by Lennette and Koprowski, is one of them, and our case of M. F., an animal caretaker, could also be due to it. However, our neutralization test brings evidence that the transmission of the disease, or at least the promotion of an immune response, by contact, is also possible. This opinion could be corroborated also by the observation of Howitt,[22] who tested the serums of a group of 9 persons who had been in contact with frank cases of human encephalitis. Seven of them had antibodies for the western virus. According to Howitt, several of these persons undoubtedly had an abortive type of encephalitis with slight fever that may have been responsible for the production of antibodies.

The interval after the onset of illness in which neutralizing antibodies appear seems to be very short.[23] In the serum of our case M. C., antibodies were found as early as the fifth day of the supposed illness. According to Howitt,[22] neutralizing antibodies for the western strain are found during the first two weeks after the onset of illness in 100 per cent.

Antibodies persist in the serum for a long time after the infection. We found high neutralizing antibody titers in the serums of 3 persons who did not have any contact with the encephalomyelitis virus for two and three and one-half years respectively. Howitt [22] also demonstrated the presence of antibodies for the western virus at least two years after the onset of illness.

Finally, the question arises from the present study whether neutralizing antibodies for the encephalomyelitis virus in the serum of a person may be considered to be a proof that the person had some time before suffered from a disease caused by this virus or, on the contrary, that they are at least in some instances the consequences of a kind of immunization due to the repeated contact with encephalomyelitic materials. This possibility, mentioned also by Beard and Finkelstein,[24] is certainly corroborated by N. M., whose serum, though he has been working exclusively with the formaldehyde treated inactive virus-containing encephalomyelitis vaccine, had as high a neutralizing antibody titer as the serums of persons working with active virus. We do suspect, however, that the serums of the majority of our persons became positive as the result of a previous infection, because, with the exception of N. M., who during three years never failed to

20. Kubeš, V.; Gallia, F., and Diamante, A., to be published.
21. Kubeš, V., and Diamante, A.: Estudios de inmunidad cruzada entre el virus de la encefalomielitis equina de Venezuela y los virus encefalomieliticos norteamericanos este y oeste y el Argentino, Bol. d. Inst. invest. vet. **1**: 47-76 (July) 1942.
22. Howitt, B. F.: The Complement Fixation Test with Human Sera Against the Viruses of St. Louis Encephalitis and Equine Encephalomyelitis, J. Immunol. **47**: 293-302 (Oct.) 1943.
23. Casals, Curnen and Thomas.[17] Lennette and Koprowski.[19]
24. Beard, J. W., and Finkelstein, H.: Data presented at the meeting of the American Association of Immunologists, Toronto, April 26, 1939.

come to work, all of them had to stay at home at one time or another on account of some grip infection. Several persons also remember very strong muscle pains, and 1 of them even a pronounced somnolence for three days. This mild and inconspicuous course of the illness caused by the Venezuelan virus is doubtless also the main reason for the lack of any communication about encephalomyelitis in man from areas where the disease is enzootic in equines.

In view of the work of Casals and his collaborators, of Lennette and Koprowski and of the present study, it may be said that the Venezuelan equine encephalomyelitis strain differs from both the western and the eastern virus not only by its immunologic character but also by a distinct pathogenicity for man.

SUMMARY

1. The serums of 3 laboratory workers and 1 caretaker of experimental animals, who have now been working for from two to five years with encephalomyelitic material, showed high neutralizing antibody titers (average neutralization index $10^{-4.74}$).

2. The serums of 3 laboratory workers who worked previously with the virus but by now have not had any contact with encephalomyelitic material for two and three and one-half years had an equally high virus neutralizing power (average neutralization index $10^{-4.44}$).

3. The same neutralization index showed also the serum of one person who worked only on very few occasions with the virus and of another who performed the dissection of 13 encephalomyelitic horses.

4. One laboratory worker, who is bottling the inactive virus-containing encephalomyelitic vaccine and who never came into contact with the active virus, also developed a high amount of neutralizing antibodies (neutralization index $10^{-4.0}$).

5. It is possible that all the persons who have been working with the encephalomyelitis virus and who remember transitory illness with grippal symptoms have suffered from an encephalomyelitic infection.

6. Six persons (3 from the institute and 3 from outside) who have never had any contact with encephalomyelitic material showed no neutralizing antibodies at all.

7. Though the Venezuelan equine encephalomyelitis virus seems to be highly infective to man by direct contact, the illness is much milder than that produced by the western and eastern encephalomyelitic virus.

First Institution for the Epileptic.—The first institution specifically for epileptics was established at Gallipolis, Ohio, in 1890 and opened in 1893. The idea of the separation of buildings into many different groups was thoroughly carried out at the Craig Colony in western New York, to create for appreciative patients homes where they could be comfortable and have suitable occupation for life. Similar institutions have been developed at Woodstock, Ontario; Abilene, Texas, and Skillman, New Jersey. Numerous institutions care for both epileptic and mentally deficient groups: for instance, Sonoma, California; Mansfield Depot, Connecticut; Glenwood, Iowa, Lynchburg, Virginia, and Cambridge, Minnesota. Such institutions usually set aside several buildings for groups of convulsive patients and distribute those who are mentally deficient but without convulsive disorders in other wards or buildings. Such sharp segregation is not always practiced, and classification by temperament and interest seems sometimes more successful than classification by psychiatric diagnosis.—One Hundred Years of American Psychiatry, New York, Columbia University Press, 1944.

EXPERIENCES UNDER THE MEDICAL EXAMINER SYSTEM

IN A SEMIRURAL COUNTY OF THE STATE OF MARYLAND

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On June 1, 1939 a law was enacted in the state of Maryland removing the investigation of unexpected, unusual and violent deaths from the hands of the coroner and a lay jury and setting up instead a more modern system, creating the office of chief medical examiner and providing for medical deputies in each county.

Responsibility for the kinds of cases formerly handled by the coroner was transferred to the newly created office of medical examiner. The deputy medical examiner, as he is termed in the counties outside Baltimore, is appointed by the Maryland Post Mortem Commission from a list submitted by his county medical society. He is charged under the new law to view the body of the deceased at the scene of death and to examine the circumstances leading to death "when any person shall die as a result of violence, or by suicide, or by casualty, or suddenly when in apparent health, or when unattended by a physician, or in any suspicious manner." The medical examiner may then sign the death certificate or he may order a medicolegal autopsy for further information, investigation to be made by himself, the county or city police or all three.

It is obvious that close cooperation of the medical examiner with the state's attorney (district attorney) is essential. In fact, in the majority of instances when postmortem examinations are considered necessary they are authorized after consultation with, or at the suggestion of, the prosecuting authority of the county. However, the law setting up the machinery for the medical examiner's system in this state gives its official representatives the right to order autopsies independently of the state's attorney. A permit from the next of kin of the deceased is not required. Thus autopsies have been ordered by the medical examiner himself in cases with a medicolegal angle when the state's attorney was unavailable and in cases involving other than purely legal problems such as compensation insurance and public health.

Autopsies are performed in Washington County by the director of the local hospital laboratory, a certified pathologist with six years' special full time training in legal medicine. He was appointed by the chief medical examiner of the state of Maryland at the suggestion of the local county medical society. The pathologist is not called on to be present at the preliminary investigation, which takes place at the scene of death. His duties are confined to postmortem examinations and to testifying when called on before the grand and petit juries.

The medical examiner's findings are reported on a special form provided by the main office in Baltimore. In addition to personal data of the deceased and final diagnosis (cause of death as stated in the death certificate), a brief summary is written concerning the circumstances leading up to, or factors contributing to, the death and the manner in which it occurred. At

the end of each month a report summarizing and classifying that month's cases is filed with the central office. Should the necessity arise, advice and assistance from the chief medical examiner are always available. Photographs taken at the scene of death by the medical examiner (photography is not police routine in Washington County) have proved of graphic assistance in reconstructing cases at a later date. A number of prints have been admitted as evidence in court and have been instrumental in confirming otherwise debatable testimony.

In any case in which an autopsy is performed, the law requires that the detailed findings be filed with the main office in Baltimore. Copies of the report are sent to the local deputy medical examiner and to the state's attorney. The subsequent microscopic reports are usually forwarded only to the two first named medical officers.

However, should the microscopic investigation show results not anticipated at gross inspection and should the findings have some practical bearing on pending legal procedures, the state's attorney also is informed and the significance of the newly found evidence explained. If chemical analysis is desired (poison cases, alcoholism), the organs, blood, urine and stomach contents are sent (if possible by special messenger provided by the sheriff's office) to the chief medical examiner's laboratory in Baltimore.[1] The unavoidable expenses connected with toxicologic investigations have so far limited their application to a few cases only. Whenever ordered, an authorization from the state's attorney is procured in advance.

Fees of both medical examiner and pathologist are set by law. The former receives $15 per case, the latter $25 for each autopsy plus a small stenographic charge. Expenses are defrayed by the county. Compared with the former system the expenses under the new law

TABLE 1.—*Medical Examiner's Cases in Washington County, Md. (Five Years' Survey)*

Year	Fatal Automobile Accidents	Suicides	Homicides	Natural Death	Other Fatal Accidents	Rape and Abortion	Poisonings; Varia	Total Cases	Autopsies
1939 (7 mo.)	6	4	4	27	6	..	1	48	16
1940	22	14	2	45	19	..	1	103	14
1941	15	13	1	36	18	1	..	84	12
1942	14	11	3	24	20	..	..	72	14
1943	15	13	4	31	17	..	3	83	17
1944 (5 mo.)	7	6	..	10	6	..	1	30	10
Total (5 yr.)	79	61	14	173	86	1	6	420	83

Fatal automobile accidents: Any fatal injury resulting from an automobile, as being killed by a drunken driver or head-on collisions.

Homicides: Include several cases of homicide with subsequent suicide of the culprit.

Other fatal accidents: Comprise, besides every kind of railroad accident, the multitude of traumatic deaths occurring in factory, farm and home work, including death by electricity.

Poisonings: Here are listed some (by no means all) of the acute alcoholic intoxications, suspected poisonings and 1 case of phosphorus poisoning (rat poison swallowed by a child).

constitute a considerable saving for the county in spite of a much greater case load.

The figures of the following survey can be evaluated only when correlated with certain data about the county itself. Washington County, Md., contains 462 square miles and comprises mountainous fringes surrounding a very fertile farm valley region. According to the 1940 U. S. census it had 68,838 inhabitants. The distribution between rural and city population in 1940 was 32,491 to 36,347. These figures may have shifted somewhat in favor of the city (Hagerstown) owing to a war boom (airplane factories). The population is fairly stable and according to the 1940 census was 97 per cent American born; 2.5 per cent represented the colored population of the whole county and 3.9 per cent that of Hagerstown proper.

TABLE 2.—*Medical Examiner's Autopsies in Washington County, Md. (Five Years' Survey)*

Year	Fatal Automobile Accidents	Suicides	Homicides	Natural Death	Other Fatal Accidents	Rape, Abortion, Stillbirth	Poisonings; Varia	Total
1939 (7 mo.)	2	3	1	5	3	1	1	16
1940	1	3	1	4	3	1	1	14
1941	1	2	..	6	2	..	1	12
1942	1	1	1	6	4	1	..	14
1943	..	1	2	9	2	..	3	17
1944 (5 mo.)	2	1	..	3	3	..	1	10
Total (5 yr.)	7	11	5	33	17	3	7	83

Because of the fairly even distribution of rural and city population and also because of the stability of the native white group, the county has figured as a sample in several surveys of the National Institute of Health (cancer frequency, tuberculosis in school children, dental caries and others).

The 420 cases listed in table 1, seen in five years, allowed for 83 autopsies. By special order of the medical examiner, and at the expense of the county, postmortem examinations have been performed forty-nine times (11.7 per cent). However, included are 2 cases in which the costs have been defrayed by insurance carriers.

In cooperation with the medical examiner, but without his express order and without remuneration from the county, autopsies have been undertaken in 34 additional instances (8.1 per cent). Among the latter group have been listed 25 patients who died at the local hospital. Although medical examiner's cases *sensu strictiori* (victims of accidents, violence, and so on), the autopsies were done more in the course of the stepped up program of the hospital for a high percentage of autopsies than for any other reason. In this category, if possible, permits have been secured from the next of kin. Included in this group also are patients dying at the hospital with no relative available for an autopsy permit. Here the medical examiner has been instrumental in authorizing a postmortem examination which would otherwise not have been feasible.

Eleven additional cases, although dying as patients of, and in, the hospital have been counted among the first group of 49 "ordered" postmortem examinations. These patients succumbed mostly in consequence of some event which led to court or insurance procedure after a short or long stay at the hospital.

The medicolegal autopsies just classified and enumerated represent, in their distribution among the different listings, a sample such as may easily be encountered in similar surveys in counties like Washington County, Md., as well as in large cities. From a purely criminologic point of view the 83 cases did not reveal any outstanding or unusual evidence except in 1 instance: A youth of 18 suffered severe lacerations of the right temple region in a motor-car accident. His deep and profusely bleeding wounds had to be sutured. Toward the end of the surgical intervention the patient suddenly vomited

1. Maldeis, H. J.: Post Mortem Examination in Cases of Suspected Poisoning, Am. J. Clin. Path. **13**: 165-169 (April) 1943.

(intravenous anesthesia had been given) aspirated stomach contents and died a few hours later. The autopsy established as the cause of death suffocation due to aspiration. Besides the external lacerations there were no fractures of the skull and no brain lesions. Since the driver of the car in which the deceased was a passenger had been accused of manslaughter, the postmortem findings raised an important legal point of utmost significance for the defendant.

The cause of death could be sufficiently unraveled in all except 2 instances. One was a suicidal death in the neighboring prison farm where even chemical investigation did not disclose what kind of drug or chemical had been employed. However, other circumstantial evidence and the lack of any striking anatomic (gross and microscopic) findings seemed to confirm the assumption of a suicidal death. In the other case (sudden unexplained demise of a man age 20 after a debauch in venere) a mechanism of the kind recently suggested by Wilhelm Raab [2] was at least considered possible, again in the presence of irrelevant anatomic and toxicologic findings.

From the standpoint of pathologic anatomy the group of "death from natural causes" represents the most interesting source of gross and microscopic material, with considerable diagnostic variation and occasional unforeseen surprises.

COMMENT

It is not our purpose in this report to compare the medical examiner's system of Maryland with that of other states where similar legislation has been in force for many years (e. g. Massachusetts, New Jersey and New York). Here, as in these other states, one of the primary aims of the new setup is to contribute to an adequate pursuit of justice, either by providing evidence of crime or violence in cases with fatal outcome or by ruling out foul play in others.

In contradistinction to the former coroner's system, no political motives govern the selection of the medical examiner, who must be a duly licensed physician in good standing.

Since the incumbrance of the coroner's jury has been completely eliminated, the procedures have become less complicated. Investigations are undertaken not only whenever special circumstances of police interest call for them but also, and in much greater frequency, under routine conditions clearly defined by the law creating the medical examiner's office. This means that instead of a few conspicuous criminal cases, a large number of less obvious but nevertheless doubtful occurrences of sudden, unexplained deaths are investigated by an independent nonpolitical officer acting for the state.

The fact that not all the really pertinent cases have been investigated makes it necessary to mention certain weaknesses of the system. Occasionally physicians, more in the outlying rural districts of the county than in Hagerstown itself, have signed death certificates for persons who according to the definitions of the law fall clearly into the medical examiner's realm. It is understandable that in the case of the sudden, unexpected death of an old man or woman known to have suffered from attacks of precordial pain the local physician prefers to sign the certificate. If the deceased happens to have been a former patient of his, the medical examiner certainly will authorize him to do so (and a considerable number of cases are handled this way, free of any charge for the county). However, there have been instances in which younger persons and children who died after a very short course of unexplained illness without medical attention have, contrary to law, not been reported. Here, usually, after the medical examiner finally had been informed of the circumstances and started his investigation, the body had already been embalmed and exhibited to friends and relatives. It is difficult, and feasible only for very cogent reasons, to order an autopsy under these circumstances in a small village community. Some difficulty too has been experienced in convincing the general public that the rumors of mutilation committed on the body of a deceased person are without foundation. It has been found best to describe the procedure as a surgical operation and to assure interested persons that all incisions are carefully sutured after completion of the "operation." Intercession by the family physician has been of great value in securing an autopsy permit from an otherwise adamant family. Although experiences of this kind have been the exception and have occurred mainly through ignorance of the law, they are cited in order to show some of the loopholes of the new system. The medical profession has been on the whole not only cooperative but also seemingly appreciative of the separation of this type of investigation from the hands of unqualified laymen.

The medical examiner's usefulness to the county depends to a great extent on his relation with the state's attorney and his staff. In fact, it stands and falls with it. No difficulties in this respect were encountered here through the change in law. The prosecuting attorney acknowledged the quasi-independent position of the medical examiner and made every effort to utilize the newly available source of additional expert information on medicolegal questions. The fact that the large group of so-called sudden deaths from natural causes was closely scrutinized by alert medical officers contributed much to mutual esteem.

Since in Maryland the tenure of office of a state's attorney ends after two years and since he cannot be nominated for consecutive reelection, the medical examiner in his work has to deal with several incumbents of the prosecuting attorney's office. This, as well as points of common interests with possible ensuing friction, make tact, discretion and reserve an absolute must in the discharge of the medical examiner's duties, the more so since he deals also with a somewhat fluctuating group of persons who serve as sheriffs, deputy sheriffs and county and city investigators (detectives). Without being in any clearly defined official relationship to the officers of these law enforcement agencies, the medical examiner needs their wholehearted cooperation. Without it all his endeavors to render good service to the public would be frustrated. Fortunately, there has been no lack of zeal, understanding and helpfulness among the group of men to whom these special duties were delegated directly by the electorate or by their respective superiors in office.

The medicolegal autopsy turned out to be the most controversial subject of the new law. There were no objections against postmortem examinations in cases of obvious homicide or manslaughter. But it took some time until the public, the law enforcing agencies and the county commissioners came to the conclusion that in having these autopsies performed a distinct service was rendered to the community. In a special meeting before the board of county commis-

2. Raab, W.: Sudden Death of a Young Athlete with an Excessive Concentration of an Epinephrine-like Substance in the Heart Muscle, Arch. Path. **36**: 388 (Oct.) 1943.

sioners, the medical examiner and the legal pathologist were given an opportunity to expound their opinions. They were able to explain why, for example, in sudden deaths in railroad yards or in municipal buildings or in certain cases of accidental death, postmortem findings would forestall a future lawsuit with eventually much greater expense to the county. The two physicians were supported in their reasoning by the state's attorney and the board's own legal adviser. A further point of interest to the county commissioners was the proof presented from available data not only that a number of examinations had been done for the county without charge but that in other cases bills had been presented only after the necropsies had established beyond doubt that there was public interest at stake.

The difficulties just described were to be expected when the new medical examiner's law was enacted in 1939. As a matter of fact the anticipation of these and similar obstacles on the part of the law makers and medical advisers was one of the main reasons that considerable leeway was left to the local deputy medical examiners. Because of the elasticity of interpretation permitted by the law, it has been possible to proceed slowly and to accustom the authorities and the general public gradually to the new situation without major conflict.

The discussion of the autopsy problem has to consider, in addition to the points touched on, the practical value to the public of postmortem examinations. No words need be wasted on cases of unequivocal criminal violence. Less well recognized by the local authorities, however, is the eventual importance of an autopsy in every case of accidental death. In cases of this type, if the cause of death can be established beyond any reasonable doubt, tedious and costly litigation at a later date may be avoided. When the argument of accident due to some primary bodily ailment (cerebral hemorrhage, coronary occlusion or others) may come up, brought to the fore in honest conviction or in hope of monetary gain, a necropsy performed shortly after death acts as an effective deterrent.

In the period covered by this report the medical examiner has been instrumental several times in contributing to the elucidation of certain public health puzzles. One autopsy of an old man who died shortly after admission to the hospital revealed as cause of death the presence of typhoid (perforated ulcer of the ileum with secondary peritonitis). This led to the discovery of a small, hitherto unknown, endemic focus of typhoid in an outlying district of the county. Another necropsy, performed on a young infant, called attention of the health authorities to a likewise limited endemic outbreak of meningococcic meningitis. The little girl showed a typical Waterhouse-Friderichsen syndrome as it has been again recently described by Martland [3] in its medicolegal implications.

In a third case a sudden death was found to have been due to a foudroyant laryngeal diphtheria in one of the poorest hill sections of the county. The child, one of a family of eight, was never seen or treated by a physician. A spread of the diphtheria was prevented.

In the fourth case, a Negro aged 40 died suddenly in the county jail, where he was awaiting removal to a mental institution after having been confined originally on a count of disorderly conduct. Necropsy revealed that in spite of a negative serologic reaction of the blood his fatal illness turned out to have been dementia paralytica with Treponema pallidum demonstrable in Levaditi stained brain sections.

3. Martland, H. S.: Fulminating Meningococcic Infection with Bilateral Massive Adrenal Hemorrhage (The Waterhouse-Friderichsen Syndrome), Arch. Path. **37**: 147 (Feb.) 1944.

SUMMARY

1. In a semirural county of Maryland, 420 medical examiners' cases have been handled during the first five years period of a new medical examiner's system introduced in 1939.

2. Under this new, nonpolitical, setup a much greater case load has been carried at lower expenses for the county than under the previous, outdated coroner's system.

3. In 83 instances autopsies have been performed. These were ordered by the deputy medical examiner 49 times, whereas 34 postmortem examinations have been done with his consent but without compensation on the part of the county.

4. The exact cause of death could be established in all but 2 cases.

5. Among the 83 autopsies, 1 case of criminologic importance, due to unusual circumstances, and 3 cases of epidemiologic (public health) significance have been encountered and brought to a satisfactory solution.

BLAST CONCUSSION INJURY

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AND
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Two hundred persons exposed to the effects of air blast produced by high explosives have been studied. Adequate clinical facilities were available and the injuries were not complicated by flying splinters, so that an unusual opportunity was presented to study the effects of blast concussion on human beings. Complete follow-up studies have been possible.

A correlation of the position of the men in relation to the explosive charge with the injuries sustained is of considerable interest. As was to be anticipated, the closer the individual to the explosion, the greater the injury. This was not always true, however, for bizarre effects were noted. One fortunate man who was standing between 2 men fatally injured, 1 of whom was found 42 feet from his original position, escaped uninjured except for perforations of the tympanic membranes. Another man was thrown 15 feet and turned completely around in midair and yet had minor injuries. This capriciousness of injury was evident time and again. One person would be seriously injured and his neighbor with seemingly identical protection, or lack of it, would escape without damage. One soldier was resting his chin on the shoulder of another in front of him who was literally "blown to bits" and escaped with a fractured maxilla. It was evident that those standing in the front row were most seriously injured, and one row of men between the soldiers and the blast afforded protection except for the tympanic membrane. But again there were exceptions, for one man standing in the second row 30 feet from the explosion was unconscious for one hour, while his companions were hardly injured. These phenomena are presumably related to two characteristics of blast waves. In the first place, near the source the blast wave is irregular in outline [1] with many "eddies" in its periphery, and

1. Discussion on Problem of Blast Injuries, Proc. Roy. Soc. Med. **34**: 171-192, 1941.

a man sheltered in such an eddy might escape serious damage. In the second place, blast waves, like sound waves, are reflected from surface to surface and are subject to reinforcement or neutralization on meeting a similar wave in the same or opposite phase.[2] And this neutralization may explain why 1 man is seriously injured and another near him is not. Indeed, in Madrid destruction of alternate houses on opposite sides of the street was not uncommon. Since pressures vary as the square or cube of the distance from the source, this difference in critical pressures may be represented by a few feet.[3]

The most striking clinical feature of those who survived was a pronounced decrease in psychomotor activity.[4] These patients were listless and apathetic, and they seemed overcome with fatigue and lassitude. They were content to stay in one place, made no conversation among themselves, and made but few demands on their attendants. There was no complaining or crying out with pain; they did not request water or sedation. Verily they were men "stunned and stupefied."

Vital functions were depressed; shock was universal and was associated with pallor and sweating. Blood pressure readings of 80 to 90 mm. of mercury systolic and 40 to 50 diastolic were the rule. This hypotension responded promptly to the intravenous administration of plasma and had entirely disappeared in every instance within twelve hours of admission. To our surprise the pulse rate in the first twelve hours was less than 60 per minute in 26 per cent, less than 70 in 75 per cent and less than 80 in 92 per cent. In addition to this unanticipated bradycardia the peripheral pulse was of a striking character, soft, collapsing and readily compressible.[5] It was so distinctive as to be remarked on by several different medical officers. Electrocardiography showed low voltage, a flattened QRS complex and normal sinus rhythm. Arrhythmia or fibrillation was not present.

The initial temperature on admission was slightly subnormal in the majority of the patients. A secondary rise of 1 or 2 degrees in from four to twelve hours was observed in the more seriously injured, and this fever persisted for one or two days. The maximum temperature observed was 102.4 F. in the patient with abdominal distention. This fever appeared within eight hours of injury and subsided in the course of three days. The red, white and differential blood counts were within the normal range. The respiratory rate on admission was low. Slow, shallow, sighing respiration seemed characteristic but in certain individuals seemed modified by pain, and these "gasped" for breath.

Pulmonary lesions have been reported constantly in experimental animals and in human beings exposed to blast.[6] Deep hemorrhages adjacent to the bronchi and lacerations along the lines of the ribs, and "red hepatinization" associated with cyanosis, dyspnea, cough, hemoptysis and roentgen ray evidence of patchy consolidation have been prominent features of the reports of others.[7] Pneumonia has been a common sequel. Chest conditions in our patients were less severe. Eight patients complained of mild pain in the chest lasting more than twenty-four hours, and 1 patient had severe pain in the chest lasting for ten days. No fractures of the ribs could be demonstrated by roentgen ray, and the pain was more diffuse in nature than that usually associated with such fractures. Only 1 patient exhibited the rusty sputum and patchy consolidation reported by others. Pulmonary edema and secondary cardiorespiratory embarrassment did not develop, which may have been due to the entire absence of exertion.[8]

In experimental animals exposed to blast, hemorrhage in the subserosa of the small or large intestine in patches or annular bands has been noted. And numerous reports of intra-abdominal injury associated with immersion blast injury have appeared.[9] But in these patients abdominal pain was not frequent in those who survived. Of those who died, abdominal evisceration was noted in 3. Severe abdominal pain was encountered in 5 instances, and mild abdominal pain in several additional patients. It was colicky and griping in nature and associated with hyperactive peristalsis in 4 of these 5. This pain subsided in a few hours except in the patient most severely injured, who had all the signs and symptoms associated with an adynamic ileus. He exhibited diffuse abdominal tenderness, distention and absence of peristaltic sounds. Because of associated injuries, laparotomy was not feasible, and the patient's symptoms subsided in four or five days on conservative treatment. Perforation of the intestine in patients who are not killed instantly by air concussion blast must be very rare,[10] and since surgery for such patients is hazardous in patients suffering from air concussion injury, laparotomy should be undertaken only with reluctance.[11] Let us repeat, this is very different from the conditions which pertain in immersion blast injury.

Unconsciousness of short duration was experienced by less than 20 per cent of the nonfatally injured. Two patients were unconscious for periods of three and four hours, respectively, without residual effects. Tremor, such as that sometimes associated with intense emotion, was common at the time of admission in conscious patients. One patient showed convulsive twitchings, while unconscious, and later recovered completely. In 2 of the 3 patients who died within thirty minutes after the explosion without external evidence of injury, generalized convulsions were noted. They were not unlike those sometimes associated with anoxia during anesthesia or too many "G's." Memory for events leading up to and after their period of unconsciousness was excellent. Residual paralysis did not occur. The presence or absence of permanent cerebral damage cannot be evaluated, for no psychologic studies of these individuals prior to their injury is available. Certain of these men have continued to have complaints for which no organic basis can be found, but their number and variety is no different from that encountered in other units of similar size and composition. Change in mood and psychomotor activity evident immediately after the blast did not persist.

2. Sutherland, G. A.: The Physics of Blast, Lancet **2**: 641-642, 1940.
3. Fulton, J. F.: Blast and Concussion in Present War, New England J. Med. **226**: 1-8, 1942. Logan, D. D.: Detonation of High Explosives in Shell and Bomb, and Its Effects, Brit. M. J. **2**: 864-867, 1939.
4. Stewart, O. W.; Russell, C. K., and Cone, W. V.: Injury to the Central Nervous System by Blast, Lancet **1**: 172-174, 1941. Wilson and Tunbridge.[10]
5. Krohn, P. L.; Whitteridge, D., and Zuckerman, S.: Physiological Effects of Blast, Lancet **1**: 252-258, 1942.
6. Gates, R.: Roentgen Findings in Immersion Blast Injuries, U. S. Nav. M. Bull. **41**: 12-19, 1943.
7. Wilson, J. V.: Pathology of Closed Injuries of the Chest, Brit. M. J. **1**: 470-474, 1943. Gates.[6]
8. Hadfield, G., and Christie, R. V.: A Case of Pulmonary Concussion (Blast) Due to High Explosives, Brit. M. J. **1**: 77-78, 1941.
9. Palma, J.: Immersion Blast Injuries, ibid. **41**: 3-8, 1943. McMullin.[11]
10. Wilson, J. V., and Tunbridge, R. E.: Pathological Findings in a Series of Blast Injuries, ibid. **1**: 257-261, 1943.
11. McMullin, J. J. A.: Foreword to symposium on Immersion Blast Injuries, U. S. Nav. M. Bull. **41**: 1-2, 1943. O'Reilly, J. N., and Gloyne, S. R.: Blast Injury of the Lungs, Brit. M. J. **2**: 423-428, 1941.

Because of the character of the soil, multiple foreign bodies (sand) in the skin were almost universal; and for the same reason injury by fragments was absent. In most instances the particles of sand were so deeply embedded that their removal was impossible even by the most vigorous scrubbing.

Injury to eyes and ears was the most common injury encountered. Tinnitus, deafness and pain referred to the ears was almost universal immediately after the explosion. The pain and tinnitus subsided in a few hours in most instances, but partial deafness persisted. The more severe immediate deafness was associated with hemotympanum rather than perforation of the drum. In the patients with actual hemorrhage into the ear drum, usually in the region of the umbo and the handle of the malleus, there was almost complete deafness. Recovery in this group was rapid with but little impairment after two weeks.

Thirty-two patients had perforation of the ear drum (14 bilateral, 12 right ear only, 6 left ear only) varying in size from small slits to complete loss of the entire tympanic membrane and ossicles, which showed no signs of healing. It was interesting to note that there was no wax in the external auditory canals of those having perforation of the ear drums. This evidence has been used by others to show that wax has protective value. It seems to us, however, that it may simply indicate that the damage is done by the short concussive blast (0.006 second) and the detritus is removed by the longer suction wave (0.03 second). We were unable to find parts of the tympanic membrane or middle ear ossicles by the most careful examination in those patients with complete loss of both structures.

The smaller perforations, including several of more than 2 millimeters in diameter, healed rapidly. Three patients in whom slightly more than one third of the tympanic membrane was destroyed healed almost completely. Those patients in whom more than one half of the ear drum had been destroyed showed no tendency toward healing.

There was no relationship between the size of the perforation and the amount of hearing loss either immediately after the accident or five months later when a loss of approximately one third for whispered voice and a greater loss for the notes above 4,096 double vibrations on the audiogram was noted. In the 3 patients with persistent otitis media there was greater impairment in hearing. In no instance was the loss so great as to prevent the performance of military duty.

With 3 exceptions the middle ears remained uninfected during the more than six months they have been under observation, and these dried up following systemic administration of sulfathiazole. One patient had a preexisting chronic otitis media which apparently was aggravated by the blast. There was no mastoiditis in this group of patients, which we attribute to the absence of local treatment within the ears and the absence of insufflation. Bleeding from the middle ear did not occur. No patient showed signs of labyrinthine involvement such as vertigo, nystagmus, past pointing or actual falling.

Ocular symptoms were equally widespread. Almost all persons exposed to the blast complained of photophobia, blepharitis and lacrimation of varying severity. This was of limited duration with the exception of 1 patient, who continues to complain of photophobia and blepharitis after six months. One patient developed haziness of the corneal epithelium a few days after injury, which disappeared in a week. In addition to those patients whose eyes were injured by blast concussion alone there were 31 patients with foreign bodies in the eyes. They were lodged in the corneal epithelium and conjunctiva in 20 patients, deep in the cornea in 9 patients and in the anterior lens capsule in 2 patients. Three patients exhibited subconjunctival hemorrhage without foreign bodies. There were no patients in this group with hemorrhage into the anterior or posterior chambers or in the retrobulbar region. There were no patients with detachment of the retina.

Six months after injury 1 patient has light perception only, 1 patient is blind in one eye and 1 patient has a posterior synechia with pronounced impairment of vision in that eye. These patients suffered from ulceration of the cornea which eventually healed. Nine men developed corneal opacities of varying size.

That tremendous damage can be accomplished alone by blast can scarcely be questioned. Death was instantaneous in most instances in which it occurred and was usually due to multiple injuries. In only 3 instances was it unaccompanied by single or multiple fractures and/or evisceration of a body cavity.

The prognosis in those not killed more or less instantaneously is probably more directly related to the treatment given than to any other single factor. The underlying pathologic lesion is probably associated with hemorrhage into various tissues and any activity, even that of transporting a patient, seems to increase this hemorrhage and lessen the likelihood of survival. Indeed, it is believed that hemorrhage into the pulmonary parenchyma may continue for more than two days, and transfer of even seemingly well patients during this interval is hazardous.[8] All patients in this group survived who reached the hospital alive or, to put it differently, all patients in this group who survived the effect of blast concussion by sixty minutes were saved.

Treatment is symptomatic and is largely governed by individual indications. Plasma may be used in liberal amounts for every patient with signs of shock and repeated as long as hypotension persists. Oxygen was likewise given freely to those patients who were either in shock or who had pain in the chest or respiratory embarrassment. Sulfonamide drugs were administered prophylactically to all patients with perforations of the ear drums or persistent pain in the chest.

SUMMARY

1. Detailed observations and complete follow-up studies were made on a group of 200 men exposed to "blast" due to the detonation of high explosives.

2. Those nearest the explosion were, in general, most seriously injured, but capricious choice of victim was noticeable.

3. Death was almost instantaneous when it occurred and was due to multiple injuries in most instances.

4. Those patients who survived sixty minutes recovered.

5. Damage to the ears by blast and to the eyes from foreign bodies occurred in a high percentage of those who recovered. Periods of unconsciousness, convulsions, chest pain, pulmonary complications and abdominal distress were minimal in this group. Intestinal perforation did not occur. Shock, bradycardia, hypotension, decreased psychomotor activity and slow respiration were the outstanding clinical signs and symptoms of this group.

Clinical Notes, Suggestions and New Instruments

CONTACT DERMATITIS FROM PENICILLIN

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AND
HERBERT RATTNER, M.D.
CHICAGO

In November 1943 a penicillin section was established at the Gardiner General Hospital. The medical officer in charge, who undertook to prepare the various solutions as well as to administer the drug to patients, noted shortly thereafter that he had a mild marginal blepharitis and conjunctivitis with some blurring of vision on reading. Glasses were prescribed for the condition, but the blepharitis persisted and soon there developed a dermatitis which began on the bridge of the nose and spread to involve adjacent areas of the forehead and the central oval of the face. The eruption had the characteristics of a relatively acute dermatitis due to contact with an irritant, and its source was thought to be in the plastic frames of the newly acquired glasses.

These glasses were discarded, but the dermatitis became progressively worse despite topical treatment with bland preparations, and in the course of a few weeks similar eczematous lesions appeared on the dorsal surfaces of the third, fourth and fifth fingers of the left hand and the distal third of the penis. The latter was swollen, edematous, reddened and excoriated, and in areas the dermatitis was moist. On Jan. 15, 1944 the actual handling of the penicillin was delegated to an assistant, and in the course of the following two weeks the lesions had completely disappeared. Some time later, when the services of the assistant were not available for a period of forty-eight hours, it again became necessary for the first officer to handle the penicillin solutions, and within twenty-four hours there was a recurrence of the dermatitis affecting the same areas.

When this attack had completely subsided, a closed patch test was performed on the arm with the penicillin in the form in which it was used. The patch was removed after forty-eight hours, and at seventy-two hours there was a strongly positive reaction with itching, erythema and vesiculation. The site showed residual hyperpigmentation even four weeks later.

We were informed by a firm that is producing penicillin "The mold in growing on this medium produces a number of substances in addition to penicillin, and as the purification process at present utilized results in a content of penicillin varying between 20 to 40 per cent, the remaining material consists of extractives soluble in organic solvents which occasionally produce urticaria and vary from batch to batch of the material." Therefore it seemed important to determine whether the mold itself or the medium was the source of the irritation. Patch tests were then performed, one with the medium alone and another with the penicillin as it is used, the latter to serve merely as a check on the first test. The whole product again produced a strong reaction, but there was no reaction from the medium, which consisted of corn steap liquor and a small amount of lactose. Another patch test was then performed with the purest penicillin then available, the material from which the crystalline product is made, and this too gave a slightly positive reaction. Several weeks later we obtained some of the crystalline material, and this, when dissolved in water and tested by means of a closed patch test, also gave a strongly positive erythematovesicular reaction. It was therefore concluded that the dermatitis in this case was produced by the penicillin itself.

For the past eight weeks the penicillin has been handled by three hospital corps men. All three have experienced, at times, slight discomfort from itching of the face and penis, though they showed no evidence of dermatitis—their symptoms were discovered only after pointed interrogation. None of these men had ever before had eczema or any other disease of an allergic nature. The question was then raised as to whether the reaction was in the nature of a true allergic hypersensitivity or a "chemical irritation." There was, of course, no material available for patch test studies of a large group of normal subjects; however, penicillin has been applied frequently in the form of dressings for topical therapy on several patients, and in none of them was there any evidence of irritation of the skin from it.

SUMMARY

A case was observed of dermatitis venenata of the face and genitalia from contact with penicillin. This is apparently the first such case to be reported.

1660 East Hyde Park Boulevard—25 East Washington Street.

From the Gardiner General Hospital, Chicago.
Dr. Rattner is volunteer civilian consultant in dermatology to the Gardiner General Hospital.

HOW TO AVOID FLARE-UPS OF PEPTIC ULCER

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A man of 50 who had always been well discovered one day that the man who for twenty years had been his brother-in-law, his closest friend and his business partner had been falsifying the books in order to steal from him. All that night he lay awake in great mental distress, and next day he had a big gastric hemorrhage. Another man, a physician, after examining a woman's stomach with a roentgenoscope, discovered that he had used a current of 60 milliamperes instead of the usual 3 milliamperes. After lying awake all night worrying over the expected burn and resultant damage suit he found himself almost incapacitated by the pain of a bad ulcer. Another man, when a violent strike in his factory distressed him terribly, had a big hemorrhage. A woman who adored her peppery little daughter-in-law one day inadvertently offended her and brought down on her head a storm of abuse which nearly killed her. Next day a long-healed ulcer flared up and perforated. A woman who heard that her soldier husband had just been killed at the front promptly had a hemorrhage.

Many such experiences will doubtless spring to the mind of every busy physician who reads these words, all illustrating what is well known today, namely that the patient with ulcer is most in danger of a flare-up or a catastrophe during the hours immediately following a distressing emotional storm. Then is the time when, probably with an increase in the acid gastric secretion, and perhaps a decrease in the alkaline and neutralizing secretions that flow into the duodenum, or a combination of these two processes, the acidity of the contents of the first portion of the duodenum becomes so high that an ulcer either develops or, if present already, promptly becomes greatly deepened. As Wolf and Wolff showed in their patient with a gastric fistula, psychic strain can produce turgesence of the gastric mucosa with a great increase in the acidity of the gastric juice.

Under the circumstances it would seem obvious that the time to start strenuous treatment should always be immediately after a psychic strain has come. Why should one wait until an ulcer has formed or, if present, has eaten its way into a blood vessel or clear through the wall of the intestine? Why wait for disaster when it might perhaps be headed off and prevented?

Furthermore, since it now appears probable that most of the injury to the duodenal mucosa that is wrought by acid comes during those hours between 10 p. m. and 3 a. m., when, in the person with an ulcer temperament, the stomach tends to be empty of food but full of highly acid and unbuffered gastric juice, would it not be logical the evening after a nervous crisis has occurred to begin with either a constant antacid drip or the taking of food and antacids every one or two hours from dinner time on to 2 or 3 a. m.? The patient can easily set an alarm clock to wake himself perhaps at midnight and again at 2 a. m.

From the Division of Medicine, Mayo Clinic.

For some years now I have been asking my patients with ulcer to do just this, and already some feel that the treatment has tided them over some bad crises in their lives and kept them from having a flare-up of their ulcer. Dozens of physicians with a tractable type of ulcer have told me that during the intervals in which their life goes peacefully they do not seem to need much dieting or other treatment.

SUMMARY

It is suggested that when a patient who has had an ulcer goes through an emotional crisis he should immediately start taking food every hour or two. He shouldn't wait for the expected flare-up or hemorrhage or perforation. The extra feedings are probably most needed between the hours of 10 p. m. and 3 a. m.

SCHISTOSOMIASIS MANSONI

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Schistosomiasis mansoni infection is an acute or chronic disease caused by the blood fluke Schistosoma mansoni. The adult worms live and lay their eggs in the veins draining the colon, the rectum and occasionally the bladder. When the ova are deposited in fresh water the egg hatches and the embryo (miracidium) enters a snail, the intermediate host (genus Planorbis or Australorbis), where it undergoes asexual development. The free swimming larvae (cercariae) emerge from the molluscan host into fresh water and infect man by penetration of the skin during swimming, wading, bathing or using infected water in showers.[1]

The diagnosis is established only when the characteristic lateral-spined ova are found in the stool. Occasionally they are present in both urine and stool.

Antimony and arsenical compounds are used in the treatment of Schistosomiasis mansoni. The trivalent antimony compound neoantimosan (Fuadin) is one of the drugs of choice because of its ease of administration and infrequent reactions. Potassium or sodium antimony tartrate is administered when satisfactory results are not achieved after the use of fuadin.[2]

REPORT OF CASES

CASE 1.—An Arab aged 30 (from Yemen) was admitted to the U. S. Marine Hospital, Ellis Island, N. Y., on Sept. 29, 1943 complaining of weakness, loss of weight, poor appetite, constipation, and blood and mucus in the stools.

The onset of his complaints began about one year prior to admission, when he had abdominal cramps and a small amount of blood and mucus in the stools. About six months prior to admission constipation started, and he had burning on urination and blood in the urine, the blood being expressed at the end of micturition. About five months prior to admission the patient suddenly felt itchy and had a generalized skin eruption, which he described as resembling hives. The eruption lasted for about two days and then disappeared. A week later it recurred and for the next two months it appeared intermittently. The patient stated that he had not had any previous illnesses except an attack of chills and fever lasting about a month, which occurred five years previously, while he was living in Yemen.

Physical examination at the time of admission was normal except for malnutrition. The patient was 64 inches (163 cm.) tall and weighed 112 pounds (51 Kg.). No rectal polyps or hemorrhoids were present. Several small, irregularly shaped, bleeding, ulcerated areas above the distal rectal haustration were seen on proctoscopy. No ova or parasites were found in scrapings taken from the ulcerated areas. Repeated stool examinations showed the presence of ova of Schistosoma mansoni and Trichuris trichiura. Centrifuged specimens of urine did not contain any ova or parasites. The red blood cell count was 4,920,000, with 85 per cent hemoglobin (Sahli), and the white blood cell count was 5,400, with 65 per cent neutrophils, 30 per cent lymphocytes and 5 per cent eosinophils. The Wassermann and Kahn reactions were negative, and the sedimentation rate (Cutler method) was 6 mm. in one hour. The total blood protein was 6.2 per cent, with an albumin of 3.5 per cent and globulin of 2.69 per cent, yielding an albumin-globulin ratio of 1.3. A roentgenogram of the chest was normal.

Treatment consisted of a full course of ten intramuscular injections of fuadin and 1.0 Gm. of hexylresorcinol was given orally for his Trichuris trichiura. This was combined with general supportive measures including a high caloric, high vitamin diet. Using zinc flotation technic, no ova of Schistosoma mansoni or Trichuris trichiura could be found after the fourth injection of fuadin, and repeated examinations remained negative. The patient's appetite improved, he gained strength, and there was no more blood or mucus in the stools. At the time of discharge, on Dec. 14, 1943, one month after discontinuing treatment, he had gained 3 pounds (1.3 Kg.).

CASE 2.—An Arab aged 30 (from Yemen), who has lived in the United States for the past twenty years, was admitted to the U. S. Marine Hospital, Ellis Island, N. Y., on Oct. 25, 1943 complaining of low back pains, weakness, and some loss of weight for the past two years. Treatment at several hospitals for lumbosacral strain, consisting of alcohol injections in the lumbar region and short wave diathermy to the back, was given, but he failed to improve. The patient stated that he had always been well previous to the onset of his illness.

Physical examination at the time of admission was normal, except for moderate tenderness elicited on pressure over the lumbosacral region and over both iliac crests posteriorly. The patient was 66 inches (167 cm.) tall and weighed 132 pounds (60 Kg.). The red blood cell count was 4,110,000, with 88 per cent hemoglobin (Sahli), and the white blood cell count was 4,200, with 58 per cent lymphocytes, 34 per cent neutrophils and 8 per cent eosinophils. The Wassermann and Kahn reactions were negative and the sedimentation rate (Cutler method) was 24 mm. in one hour. Roentgenograms of the spine, long bones and chest were normal. Ova of Schistosoma mansoni were found in the stool on three successive days. Centrifuged specimens of urine did not contain any ova or parasites.

The patient was given a full course of fuadin intramuscularly. With the zinc flotation technic, ova could not be found after the fifth injection and the stools remained negative.

At the time of discharge on Jan. 3, 1944, one month after discontinuing treatment, the patient had gained 13 pounds (5.9 Kg.), his backache had almost completely subsided, and he felt very much improved. The red blood cell count was 4,810,000, with 86 per cent hemoglobin (Sahli), and the white blood cell count was 7,200, with 70 per cent neutrophils, 27 per cent lymphocytes and 3 per cent eosinophils. The sedimentation rate (Cutler method) was 18 mm. in one hour.

COMMENT

These 2 cases of Schistosomiasis mansoni demonstrate the insidiousness of the disease. This point was well demonstrated by the second patient, who had been living in this country for twenty years. His infection began, in all probability, prior to his entry into the United States.

Physicians should be constantly on the lookout for parasitic diseases, especially in all persons returning from endemic areas. It is therefore advisable for every one who has been in any country where parasitic diseases exist to have a stool examination on returning to this country. The stools should always be obtained following the administration of a saline purge. The examination should be made regardless of whether or not symptoms of a parasitic infection are present.

1. Belding, D. L.: Textbook of Clinical Parasitology Including Laboratory Identification and Technic, New York, D. Appleton-Century Company, Inc., 1942, pp. 551-584. Strong, R. P.: Schistosomiasis, in Nelson's New Loose Leaf Medicine, New York, Thomas Nelson & Sons, 1941, vol. 2, chapter 5, pp. 467-474.

2. Manson-Bahr, P.: Manson's Tropical Disease, ed. 10, London, Cassel & Co., Ltd., 1935, pp. 659-685. De Rivas, D.: Parasites, in Piersol, G. M., and others: The Cyclopedia of Medicine, Surgery and Specialties, Philadelphia, F. A. Davis Company, 1939, vol. 11, pp. 308-316.

Special Article

AMERICAN HEALTH RESORTS

THE PLACE OF HEALTH RESORTS IN REHABILITATION FOLLOWING INJURIES

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It is undoubtedly a fact that we are now facing the most stupendous problem in rehabilitation which has ever existed in the history of the world.[1]

The number of war injuries sustained in the army and navy and also in industrial and other civilian pursuits will be the largest our country has ever known. Adequate utilization of our national health resorts will assist materially in solving our rehabilitation problems. But rehabilitation of those disabled by the war must follow a broad general plan in which use of our health resorts can play only a limited, although extremely important, part.

Fortunately, considerable thought is already being given to postwar rehabilitation. President Roosevelt [2] in a radio address on July 28, 1943 said: "We must this time have plans ready—instead of waiting to do a hasty, inefficient and ill considered job at the last moment." He outlined a six point program, which included as one item "improved and liberalized provisions for hospitalization, rehabilitation and medical care of disabled members of the armed forces and merchant marine." Former President Herbert Hoover [3] has said "I have always felt it of paramount concern to rehabilitate human beings; to return a man or woman to productive citizenry is an urgent need and a service of the highest order to the social and economic welfare of our country."

General Fred W. Rankin [4] in his presidential address to the American Medical Association said "Consideration is already being given to postwar planning even though it may seem little warranted at this time. It should be realized, however, that only by such long range charting can the confusion and disorder which characterize immediate postwar reconstruction periods be averted." During the last war, as hinted by President Roosevelt, some of our rehabilitation planning was hasty and inefficient. This led Johnstone [5] to comment "Rehabilitation of our armed forces has been attempted following all previous wars but has never been successful." General Frank T. Hines,[6] administrator of the Veterans Administration, has explained that after the last war "veterans were advised to undertake a training program for an objective which could not be obtained."

It is evident that disabled persons must be restored as nearly to normal as possible before they are returned to civilian occupations. They cannot attain suitable adjustment in normal activities without first receiving adequate medical reconstruction. Now is the time for us to determine just exactly what is the place of health resorts and other rehabilitation agencies in this reconstruction of the injured. Health resorts often will be found to be ideal locations for providing satisfactory "rehabilitation and medical care" in order to return injured persons to "productive citizenry."

GENERAL PLAN FOR REHABILITATION

In order to determine the exact sphere of usefulness of treatment in a health resort as part of a broad plan of total rehabilitation, it is necessary to outline such a plan. Recently I [1] pointed out that our problem begins when a soldier or sailor is first wounded and ends only when he is finally completely adjusted in a suitable position in civil life. Similarly, the civilian war worker who is injured must be carried through several stages of reconstruction before he is finally completely rehabilitated. I have concluded [1] that there are, roughly, nine steps to be taken in a complete plan for total rehabilitation. These are:

1. Immediate emergency care.
2. Secondary emergency care.
3. Care during transportation.
4. General hospital care.
5. Care in rehabilitation centers.
6. Vocational guidance.
7. Vocational training.
8. Selective placement.
9. Industrial rehabilitation.

It is during steps 5, 6 and 7 that health resorts will be utilized most frequently. They should serve chiefly as rehabilitation centers, and during the reconstruction period vocational guidance and vocational training often can be inaugurated. In some instances the health resort can fit also into steps 4 and 8 of the overall rehabilitation plan. At times general hospitals can be located at health resorts in order that patients may be placed in a healthful environment at the earliest possible moment. Also at times selective placement can be arranged at the health resort before the patient establishes a permanent home in civil life. It is obvious that in many instances it will be advisable for the disabled person to be placed suitably before he leaves the rehabilitation center. In the overall plan of rehabilitation which we must develop it is evident that health resorts may have a wide sphere of usefulness.

BRITISH PLANS FOR REHABILITATION

In the present war in England there has been promulgated the Tomlinson plan.[7] This is essentially an elaboration of the medical rehabilitation program developed at Shepherd's Bush in 1916 by Sir Robert Jones.[8] In an appendix to the Tomlinson report appears a "rehabilitation scheme." In this scheme are listed the various types of disablement, the types of institutions in which these conditions should be treated, the suggested remedial treatment, the probable resulting medical condition, the further provisions which are needed, and also the type of center or institution in which final rehabilitation should be completed. It will be seen on consulting the accompanying table that physical therapy, occupational therapy, physical training, vocational training centers, sheltered workshops and reconditioning centers (with medical supervision) are recommended

From the Section on Physical Medicine, Mayo Clinic.

1. Krusen, F. H.: Wartime Physical Rehabilitation: Part II, Proc. Staff Meet., Mayo Clin. **18**: 344-352 (Sept. 22) 1943.
2. Roosevelt, F. D.: Radio address as reported in the Minneapolis Star-Journal, July 28, 1943.
3. Hoover, Herbert, quoted by Frampton, M. E., at a hearing on vocational rehabilitation and training before the Committee on Education, House of Representatives, 78th Congress, 1st session, Washington, D. C., Government Printing Office, 1943, number 82938, p. 26.
4. Rankin, F. W.: Postwar Medicine, Minnesota Med. **26**: 601-603 (July) 1943.
5. Johnstone, R. T.: Industrial Participation in the Rehabilitation of the War Wounded, in Brown, W. B., and Runes, D. D.: Rehabilitation of the War Injured, New York, Philosophical Library, 1943, pp. 541-547.
6. Hines, F. T.: Testimony at the hearing on vocational rehabilitation and training, p. 14.
7. The Tomlinson Report, editorial, Lancet **1**: 113 (Jan. 23) 1943.
8. Jones, Robert, quoted by Watson, Frederick: The life of Sir Robert Jones, London, Hodder & Stoughton, Ltd., 1934.

for many types of disablement. These forms of therapy usually can be provided best at an established health resort.

The actual experiences of the British Royal Air Force with rehabilitation centers of the health resort type have been so enthusiastically reported by Watson Jones,[9] civilian consultant in orthopedic surgery to the Royal Air Force, that they will be quoted at some length. Watson Jones mentioned an air gunner who remained in a civilian orthopedic hospital for treatment of a torn and displaced semilunar cartilage for ten months and who was still totally incapacitated even though the diagnosis had been correct, a skilful operation had been performed, there had been no surgical complication and he was receiving daily massage. He limped, "he would not cooperate" and he was depressed.

REHABILITATION SCHEME FOR VARIOUS TYPES OF DISABLEMENT
(BEING THE APPENDIX TO THE TOMLINSON REPORT)

I—Type of disablement.	II—Type of institution in which treated.	III—Remedial treatment.	IV—Resulting medical condition.	V—Further provision needed.	VI—Type of centre or institution.
1. Fracture or other physical injury.	Orthopædic centre. Fracture unit. General hospital.	Surgical or orthopædic. Occupational therapy. Remedial exercises and physiotherapy. Hospital workshops.	(a) Complete restoration. (b) Partial restoration—but allowing return to ordinary employment in previous or similar occupation. (c) Permanent disability preventing return to previous occupation, but permitting employment in a new occupation—after training if necessary. (d) Permanent and serious disability causing a grave handicap to employment and, in some cases, preventing employment under ordinary conditions.	(a) In some cases reconditioning course. (b) Ditto. (c) Vocational training—preceded in some cases by a reconditioning course. (d) Specialised vocational training or sheltered employment. *Note.*—Artificial limbs may be required for some cases under (c) and (d).	(a) Reconditioning centre. (b) Ditto. (c) Vocational training centre—after (for some cases) a preliminary course at a reconditioning centre. (d) Special training centre for ordinary employment. Institution providing sheltered employment.
2. Other surgical conditions and the general group of medical cases.	As a rule in a general hospital. (*Note.*—The present provision for proper rehabilitation treatment is inadequate and should be developed.	If illness is prolonged, and especially if associated with sepsis, gradual restoration of bodily strength by physiotherapy, exercises, &c., would be essential—with special attention to the feet to prevent dropping of the arches.	(a) The majority should have complete restoration of function. (b) In some cases there might be some residual weakness—e.g., of the abdominal wall.	(a) In some cases a reconditioning course. (b) Convalescent treatment—followed in some cases by a reconditioning course—under medical supervision. *Note.*—Artificial limbs may be required for some cases.	(a) Reconditioning centre. (b) Reconditioning centre—with medical supervision.
3. Cardiac cases.	General hospital. (*Note.*—Special hospitals are required for the further treatment of some of the cases in this group.)	If the valves are badly affected, little chance of restoration. Where the heart muscle only is involved, restoration to fair, if not full, working capacity can be achieved—by rest over a long period and then graduated exercises.	(a) Residual disability preventing heavy physical activity but permitting light and sedentary work. (b) Serious disability preventing employment under ordinary conditions.	(a) Special care in selecting employment—with vocational training as required. (b) Sheltered employment.	(a) Vocational training centre as necessary. (b) Institution providing sheltered employment. *Note.*—Medical supervision will be necessary under both (a) and (b).
4. Pulmonary tuberculosis.	Sanatorium. Tuberculosis hospital. Sanatorium-cum-hospital. Home for advanced cases.	Rest, hygiene, diet. Collapse therapy (including major surgery). Chemotherapy. Occupational therapy.	(a) Restoration—permitting employment under ordinary conditions. (b) Quiescence—requiring part-time or modified employment to prevent relapse. (c) Unfit for employment under ordinary conditions	(a) Care in selecting employment. (b) Special provision for part-time or modified work. (c) Sheltered employment.	(a) — (b) For some cases—special institution providing sheltered employment. (c) Special institution providing sheltered employment.
5. Blindness.	Special eye hospital. Special department of general hospital. General hospital for treatment of underlying medical condition.	Surgical (e.g., cataract removal). Optical appliances, including recent "contact lenses." General medical treatment.	(a) Restoration of good sight. (b) Restoration of limited but useful sight. (c) Blindness or its near equivalent.	(a) In some cases a reconditioning course. (b) Care in selecting employment and, for some cases, vocational training. (c) Carefully selected employment in ordinary industry, or sheltered employment.	(a) Reconditioning centre. (b) Vocational training centre as required. (c) Blind workshop or organised home worker scheme.
6. Deafness.	Special department of general hospital. General hospital for treatment of underlying medical condition.	Surgical. General medical treatment. Appliances.	(a) Improvement of hearing. (b) Defective hearing. (c) Total deafness.	(a) — (b) Training in lip reading or provision of artificial aid. (c) Training in lip reading and, for some cases, vocational training.	(a) — (b) Vocational training centre as necessary. (c) Schools or evening institutes, and, for some cases, vocational training centre.
7. Neurosis.	Neurosis centre (under E.H. scheme). Special O.P. departments of general hospitals. A few special clinics for outpatients.	Psychotherapy, with occupational therapy, physical training and workshops.	(a) Restoration—permitting return to ordinary employment. (b) Minority remain as problem cases and misfits, and require individual consideration, but are capable of selected employment.	(a) Careful selection of employment—with a reconditioning course for some cases. (b) Selected employment and aftercare.	(a) For some cases—reconditioning centre. (b) —
8. Psychosis.	Mental hospital—as certified or voluntary patients	Medical and psychotherapeutic treatment, with occupational therapy.	(a) Fit for ordinary employment. (b) Fit for specially selected employment. (c) Permanent disablement and unsuitable for employment.	(a) Assistance in placing, probably preceded in some cases by a reconditioning course. (b) Carefully selected employment and aftercare. (c) —	(a) Reconditioning centre for some cases. (b) — (c) —

From the London Lancet **1**: 119 (Jan. 23) 1943.

9. Jones, R. W.: Rehabilitation in Royal Air Force, Brit. M. J. **1**: 403-407 (March 28) 1942.

He had been told that "the nerve to his knee had been cut." Then he was transferred to one of the orthopedic rehabilitation centers of the Royal Air Force medical service.

Watson Jones described subsequent events as follows: "He saw the sky, the sea, the open spaces. For many months he had seen only the stone walls of many corridors. His new surroundings were different: there was a lounge and a writing room, tasteful decorations and flowers, a menu which was varied and excellent, an atmosphere of well being and contentment. After a few days he smiled. There was sometimes a sparkle in his eye. Within a week he sensed the spirit of optimism. It grew upon him and he was reassured. His difficulties were explained and he was taught special exercises. He learned to walk then to run. He became an enthusiast and worked hard. He worked in the gym, played on the fields, swam in the pool, cycled on the track. Time raced past, for he was busy. He attended lectures, played billiards and went to concerts. He became bronzed and fit. He laughed and was full of the joy of life. In seven weeks he returned to his unit and to full duty. He forgot about the 'nerve in his knee.'

"Ten months—total incapacity; seven weeks—full recovery."

What better argument could one present for the importance of the health resort in rehabilitation of the disabled? Watson Jones has stressed the fact that this is not an isolated case but is "typical of the experience of many victims of bone and joint injury."

AMERICAN PLANS FOR REHABILITATION

The British have had more time to develop rehabilitation plans and also have had more military and civilian casualties than we have had in the United States. In the course of the last war there was organized in the Office of the Surgeon General of the United States Army a Division of Physical Reconstruction. This division functioned so successfully that Cotton[10] was led to comment "During the war our returning soldiers were given a care in convalescence that was wiser and broader than we have been accustomed to and was carried out with an extraordinarily high average of efficiency." But with the signing of the armistice in 1918 this reconstruction program gradually deteriorated and the final rehabilitation of many of our soldiers was not accomplished.

Unfortunately, physicians frequently have considered that their responsibility ended when the patient was dismissed from the general hospital and they have failed to carry through with the medical supervision of the last five steps of the complete nine step rehabilitation plan which was mentioned earlier in this article. Notably did we fail to establish enough well organized rehabilitation centers in which to provide physical therapy, occupational therapy, limited work therapy, sheltered employment, remedial exercises, sports and recreation similar to the modern Royal Air Force center in which the air gunner mentioned by Watson-Jones convalesced so rapidly.

In this war it is already apparent that we are doing much better. Although there is still a great deal to be accomplished, it is now evident that we are gradually developing all phases of a general rehabilitation plan.

Starting with step 4 of the nine step rehabilitation plan, general hospital care, we find that army physicians are thinking about the provision of proper exercises in early convalescence. For example Stephens,[11] intrigued by the work of von Quincke[12] and Smitt,[13] who urged early employment of exercises for hospitalized patients in the course of the last war, has stressed the need for exercise in the early stages of orthopedic convalescence. In order to encourage patients to progress with their exercises, Stephens has recommended Lieut. Col. Howard Rusk's plan for grading all cases in five categories. The patient then obtains benefit and a psychic stimulus by progressing from one grade to another. These five grades or classes are as follows: Class 5—Patients who are completely bedfast but not in critical condition. Class 4—Patients who are capable of being out of bed but are still on crutches and cannot leave the ward. Class 3—Patients who are out of bed and going to meals but not yet ready for rigorous training. Class 2—Patients who are out of bed and about, walking without assistance and who are nearly ready for duty. Class 1—Patients who are capable of exercising for at least one hour twice a day. Stephens concluded that there is need for these early physical exercises in order "to shorten the recovery period, improve morale and lessen the danger of permanent disability."

It is extremely pleasing to observe that in this war our army, navy and the Veterans Administration are establishing rehabilitation centers at many health resorts in which the exercises started in general hospitals according to Stephens' plan can be continued and in which all other forms of rehabilitation procedure can be provided.

Army Medical Centers at Health Resorts.—The United States Army Medical Corps has established, among others, hospitals at the following resorts: (1) White Sulphur Springs, W. Va., Ashford General Hospital; (2) Colorado Springs, Colo., Station Hospital, Camp Carson; (3) Denver, Fitzsimons General Hospital; (4) Hot Springs, Ark., Army and Navy General Hospital; (5) Battle Creek, Mich., Percy Jones General Hospital; (6) Swannanoa (near Asheville), N. C., Moore General Hospital; (7) Tucson, Ariz., Station Hospital, Davis-Monthan Airfield, and (8) Miami, Fla., Miami Army Air Force Hospital.

Navy Medical Centers at Health Resorts.—The Bureau of Medicine and Surgery of the United States Navy has established, among others, hospitals at the following resorts: (1) Asheville, N. C., (2) Yosemite, Calif., (3) Glenwood Springs, Colo., and (4) Sun Valley, Idaho.

Veterans Administration Centers at Health Resorts.—It is understood that the Veterans Administration is contemplating the establishment of hospitals at such health resorts as (1) Saratoga Springs, N. Y., (2) Hot Springs, Salt Lake, Utah, (3) Hot Springs, S. D., (4) Bay Pines, Fla., (5) Mineral Springs, Texas and (6) Excelsior Springs, Mo.

Representative Rehabilitation Plans Developing at Army and Navy Hospitals.—It has been my privilege to train in methods of physical rehabilitation a considerable number of the army and navy officers who are mentioned in the following paragraphs. Thus I have been able to follow with great interest the rehabilitation programs that some of these fine officers are developing. I wish that it was possible to describe all these develop-

10. Cotton, F. J.: The Need for War Trained Physiotherapy Experts in the Hospital, Mod. Hosp. **14**: 101-102 (Feb.) 1920.

11. Stephens, J. T.: Unpublished data.

12. von Quincke, H.: Bewegungsübungen bei Nachbehandlung innerer Krankheiten, München. med. Wchnschr. **66**: 1339-1340 (Nov.) 1919.

13. Smitt, Willem: Die Bedeutung der manuellen Krankengymnastik, München. med. Wchnschr. **67**: 292-293 (March 5) 1920.

ments, but there is space for only a few. The rehabilitation work at Army and Navy General Hospital at Hot Springs, Ark., at Moore General Hospital, at Ashford General Hospital, at Fitzsimons General Hospital and at the Naval Convalescent Hospital at Glenwood Springs is particularly interesting and perhaps typifies

Fig. 1.—Convalescent patients at Ashford General Hospital pitching horseshoes for reconditioning and recreation.

the progress in rehabilitation of the disabled which is being made at various governmental hospitals in health resorts.

Army and Navy General Hospital, Hot Springs, Ark.: The Army and Navy Hospital is an old established military hospital which has long been conducted as a rehabilitation center. It has a well organized physical therapy section which has been under direct medical supervision for many years. The last three army medical officers who have directed this department are Major Dwight Lawson, Major A. E. White and Capt. Jerome Lee. The hospital has a physical therapy department, a fever therapy department, a hydrotherapeutic pool and a heliotherapy deck. In these departments qualified technicians administer various forms of treatment under the supervision of the medical chief of the section. Before the outbreak of the present war, many chronic diseases were treated at this hospital.[14] An excellent program of rehabilitation is in operation.

Moore General Hospital, Swannanoa, N. C.: The Moore General Hospital is one of the newer army hos-

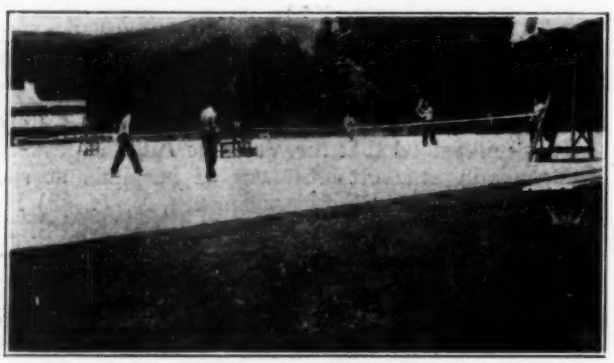

Fig. 2.—Convalescent patients playing tennis at Ashford General Hospital

pitals established in the beautiful mountain health resort district of western North Carolina near Asheville. The altitude is 2,700 feet above sea level. Major Earl Rothermel is in charge of physical rehabilitation at this hospital.[15] A complete physical therapy department has been organized and it is being utilized chiefly for the rehabilitation of acute injuries.

Ashford General Hospital, White Sulphur Springs, W. Va.: Just as is true of the Moore General Hospital, so the Ashford General Hospital is situated in a delightful mountainous resort region. The famous old Greenbrier Hotel has been remodeled to accommodate this hospital, and the magnificent grounds, including tennis courts, golf courses and mountain trails, are available for the convalescent soldiers.

Capt. Carl Levenson is in charge of physical rehabilitation at this hospital. The program for rehabilitation of the disabled at Ashford General Hospital is notable because Colonel Beck, the commanding officer, has established a special convalescent program. This plan is under the direction of a special service officer, Lieut. Robert E. Strzelczyk, who is a graduate in physical education and also a registered physical therapy technician.[16]

An individualized exercise program is provided for each patient according to his physical capabilities. Most of the convalescents are finally discharged back to duty. A sports program is provided, including fishing, hiking over the many trails, horseshoe pitching (fig. 1), tennis (fig. 2), croquet, calisthenics (fig. 3), throwing the

Fig. 3.—Convalescent patients in calisthenics class at Ashford General Hospital.

medicine ball (fig. 4), golf (fig. 5), badminton (fig. 6), archery (fig. 7), volley ball and wood carving.[17] With such an environment and with such a well organized program there is small wonder that our disabled soldiers are rapidly being rehabilitated at this fine institution.

Fitzsimons General Hospital, Denver: The Fitzsimons General Hospital is one of the older permanent army general hospitals. It has recently been housed in a very large and commodious new building (fig. 8). Situated at a high altitude, Denver is well known as a health resort region.

Major O. L. Huddleston[18] is in charge of physical rehabilitation at this hospital. Just as the Ashford General Hospital is notable for its convalescent exercise program, so is the Fitzsimons General Hospital distinguished for the excellent convalescent ward program which has been developed by the commanding officer, General Quade, on the recommendation of Major Huddleston. These plans might well be copied by other governmental and civilian rehabilitation centers.

14. White, A. E.: Personal communication to the author.
15. Rothermel, E. W.: Personal communication to the author.
16. Col. Clyde M. Beck, commanding officer at the Ashford General Hospital, has recently written me as follows: "From my experience in the last war, and as a medical officer since that time, I feel that one of the greatest steps which has been taken in this war has been the effort directed toward the rehabilitation of the injured soldiers. I firmly believe that the health resort centers which are being used by the Army are playing an ever increasing part in this program."
17. Seeley, Sam: Personal communication to the author.
18. Huddleston, O. L.: Personal communication to the author.

The convalescent ward program has been incorporated in the therapeutic plan of the physical therapy department. To begin with, Capt. John Naugle, a medical officer who had been specially trained in physical therapy, was selected as the ward officer. The administration was placed under the physical therapy department. Patients assigned to this convalescent ward no longer report to their original wards except for weekly reexamination. There is no nursing service associated with the ward. The personnel in the ward consists of enlisted men exclusively. The medical officer is assisted in the management and care of patients by several sergeants.

Convalescent care of these patients includes drill, calisthenics and gymnastic sports such as volley ball, basketball and football signal practice. The convalescent patients who require physical therapy report regularly to the physical therapy clinic for treatment. The therapeutic program is coordinated so that patients are kept busy most of the day.

When patients are assigned to the convalescent ward program they are no longer under liberal hospital regulations but under strict military discipline. Surprisingly they prefer this strict supervision and regimentation to

Fig. 4.—Convalescent patients throwing the medicine ball at Ashford General Hospital.

the liberal and somewhat relaxed discipline of the ordinary hospital ward. Most of the patients were in the surgical service and their morale improved materially when they were transferred to the convalescent ward program. Interestingly, the patients on this program have exhibited a decided increase in the rate of progress toward recovery over the rate achieved when they were receiving only physical therapy. It is proposed to coordinate this convalescent ward plan with occupational therapy and work therapy.[18] This is the type of program which undoubtedly will tend to improve morale and speed recovery.

Naval Convalescent Hospital, Glenwood Springs, Colo. (fig. 9): In the course of the last war the Medical Corps of the United States Navy did not need to develop an extensive convalescent program but, with the increased number of naval casualties in this war, the need for naval rehabilitation centers has become evident. It is very gratifying to note that the Bureau of Medicine and Surgery of the navy is aware of this need and has taken immediate steps to make satisfactory provisions for it. One of the most interesting and most complete programs for rehabilitation of the disabled sailor is being developed at Glenwood Springs. This plan is of especial interest because the natural resources of this health resort are being utilized to the fullest extent.

The program is being developed by the physical rehabilitation officer, Lieut. Glenn Drewyer, a physician with special training in physical medicine, under the direction of the commanding officer, Captain McDermott. During a period of six months of intensive training in physical medicine, Lieutenant Drewyer

Fig. 5.—Convalescent patients playing golf at Ashford General Hospital.

worked out a complete rehabilitation scheme for injured sailors. It is extremely gratifying to find that he is now being given the opportunity to develop this plan in a practical manner.

Attached to the hospital is "the world's largest mineral water swimming pool," which is 650 feet long by 100 feet wide. This pool is supplied by Yampah, which is the largest hot mineral spring at the resort. The temperature of the water from this spring is 127 F., but this temperature can be modified and controlled by governing the inflow to the pool from an adjacent mountain creek. Thus there is offered a tropical water swimming pool, at an elevation of 5,740 feet above sea level, which can be utilized therapeutically the year round. This pool is being employed for underwater exercises. Another spring comes from a cave in the mountainside. The Indians used to take hot vapor baths in this cave. It was called by them "Yama Water," or medicine water. Subsequently it was enlarged to include three caves, and a building was

Fig. 6.—Convalescent patients playing badminton at Ashford General Hospital.

placed over these. In these three caverns, water from the spring at a temperature of 140 F. circulates through troughs in the floor. The temperature of the air in the caverns varies from 102 to 110 F. and the relative humidity from 87 to 93 per cent. Thus there are provided natural fever therapy rooms at nearly ideal temperatures and humidities.

During a treatment session of twenty minutes in these caves the patient's systemic temperature will rise 2 to 3.5 degrees F. Already these caves have appeared to be of some benefit, when employed in conjunction with effleurage, in treatment for filariasis. The caves have been also used in verifying the cure of malaria. The

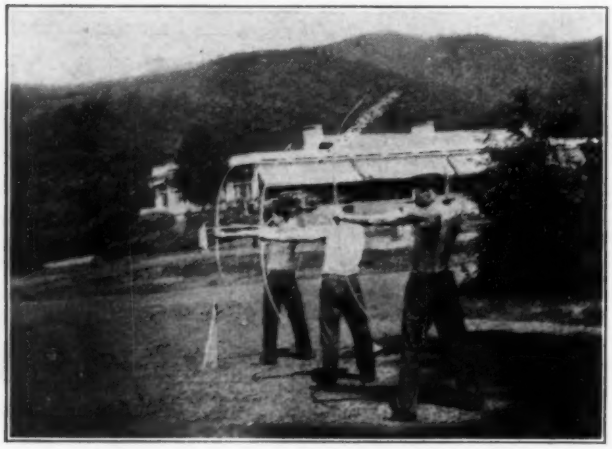

Fig. 7.—Convalescent patients at archery practice at Ashford General Hospital.

peripheral capillary dilatation produced by the heat of the caves apparently serves to draw into the blood stream the malarial parasites which may be lurking in the spleen, liver or other organs. Thus latent malaria may be reactivated.

In conjunction with the therapeutic pool and thermal caves an excellent physical therapy department and therapeutic gymnasium have been constructed. Also there are plans for construction of an occupational therapy department, a complete wood working shop and a leather working and a weaving shop. These will be coordinated with physical therapy, therapeutic exercise and corrective occupational therapy.

A typical day for a convalescent patient will include the following program: 7 a. m., breakfast; 7:30 to 8:30 a. m., make bed and clean locker; 8:30 a. m.,

Fig. 8.—Fitzsimons General Hospital, Denver.

sick call; 9 a. m., calisthenics class; 10 a. m., swimming class; 11 a. m., treatment in department of physical medicine; 12 noon, mid-day meal; 1 to 3 p. m., light work detail; 3 to 5 p. m., organized sports assignment (sports commensurate with the patient's disability); 5 p. m., evening meal, and 6 p. m., liberty or recreational period. This program is elastic and can be modified to fit individual needs. According to Lieutenant Drewyer this "regular program fosters habits of diligence and self respect and converts indolent and often discontented patients into happy men who soon begin to feel that they are becoming useful members of society." The program "has for its theme the development of a competitive spirit—the spirit to get well." [19]

One cannot help thinking that, with such splendid progress being shown in rehabilitation of the injured at army and navy hospitals, as typified by the Ashford exercise program, the Fitzsimons convalescent ward program and the Glenwood Springs general rehabilitation program, our American soldiers and sailors are going to make the same rapid progress as was shown by the Royal Air Force air gunner mentioned by Watson Jones. The Glenwood Springs project is particularly interesting and it may become, as Shepherd's Bush became in the last war, the model for other rehabilitation centers throughout the country. Similarly civilian hospitals are beginning to consider plans for the rehabilitation of injured industrial workers and civilians in other fields. For example, the Michael Reese Hospital in Chicago is contemplating the establishment of an elaborate convalescent center, which can serve the purpose mentioned. Dr. C. O. Molander [20]

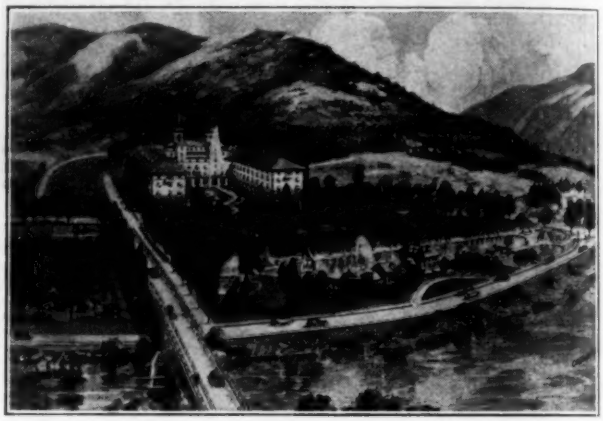

Fig. 9.—United States Naval Convalescent Hospital, Glenwood Springs, Colo.

has recently informed me about this project. It is obvious that civilian hospitals as well as military hospitals must augment their rehabilitation services greatly. It is also apparent that our American health resorts can be utilized to advantage for the rehabilitation of industrial and other civilian casualties.

FINAL COMMENT

American health resorts should play an extremely important role in rehabilitation of the disabled. As our war casualties, both military and civilian, increase it is encouraging to observe the important steps which are already being taken.

As with the related postwar educational program, if he is to cooperate, the medical rehabilitation plan must appeal to the man for whom it is provided.

It has been explained by a committee of the Association of Medical Colleges [21] that "to be at once realistic and useful, any program must reckon with the probable

19. Drewyer, G. E.: Personal communication to the author.
20. Molander, C. O.: Personal communication to the author.
21. The Postwar Responsibilities of Liberal Education: Report of the Committee on the Restatement of the Nature and Aims of Liberal Education to the Commission on Liberal Education of the Association of American Colleges, Am. A. Univ. Professors Bull. **29**: 412-431 (June) 1943.

state of mind—the attitudes and desires—of the average man returning from active war service. Unless the program appeals to him as relevant to his needs, and as he conceives them, he will participate only perfunctorily and therefore without benefit."

Obviously a rehabilitation plan which is conducted at a health resort such as White Sulphur Springs or Glenwood Springs will tend to appeal to an injured man more than one conducted in less pleasant surroundings, and surely a well organized, properly administered scheme of treatment will be more likely to gain his cooperation than would the ordinary hospital routine.

We can assume, therefore, that well developed rehabilitation programs at certain health resorts will have very definite places in treatment for injuries. The program is just beginning to take form, and it is to be hoped that it will continue to expand and grow.

As the pattern becomes clearer and clearer, one can already catch glimpses of an almost ideal reconstruction regimen. All of us must strive to bring this program into sharp focus, giving to it our best health resorts, our most skilful rehabilitation workers and some of our finest executives. A lesser effort for the care of the injured defenders of our way of life cannot possibly be considered acceptable.

Council on Pharmacy and Chemistry

THE COUNCIL HAS UNANIMOUSLY ADOPTED FOR PUBLICATION THE FOLLOWING STATEMENT ON THE DEATH OF ROBERT ANTHONY HATCHER.
AUSTIN E. SMITH, M.D., Secretary.

The Council on Pharmacy and Chemistry of the American Medical Association records with deep sorrow the death of

Robert Anthony Hatcher

When death came to Robert Anthony Hatcher in the evening of April 1, 1944 the Council lost one of its most active and helpful members and American medicine one of its respected teachers and research workers. He had been suffering from coronary attacks for many years, and they became very frequent about Christmas. Fortunately, they caused little pain. It was typical that he did not fear death.

Dr. Hatcher was born in New Madrid, Mo., Feb. 6, 1868. He was graduated from the Philadelphia College of Pharmacy in 1889 and from Tulane University School of Medicine, New Orleans, in 1898. Prior to undertaking studies in a school of medicine he gained experience in a pharmacy, which was to serve him well in his research in later years. Honorary degrees which were later conferred on him included the master in pharmacy from his alma mater and a doctor of science in pharmacy from Columbia University. He was a member of a number of scientific societies.

Dr. Hatcher is remembered and beloved by students at two universities. He was professor of materia medica at Cleveland School of Pharmacy, 1899-1904, and demonstrator in pharmacology at Western Reserve University School of Medicine, Cleveland, 1901-1903. In 1904 he became instructor in pharmacology at Cornell University Medical College, assistant professor of pharmacology and materia medica in 1906 and professor from 1908 until 1935, when he became professor emeritus. Even on retirement he did not relinquish his close association in teaching and research, as he maintained an office at the school until January 1943, when he retired to life at home.

As a member of the Council on Pharmacy and Chemistry from 1905, when the Council was created, until 1943, Hatcher gave unselfishly of his time without thought of personal discomfort and deprivation; he spent much of his time attending to Council work when he could have been with his family and planning research in problems of personal interest. Nevertheless he still managed to conduct original research on many questions, including work on digitalis, morphine, cinchophen, quinine, caffeine and strychnine. Other contributions in research and education included authorship of writings on his laboratory findings, co-authorship of textbooks on materia medica and pharmacology of drugs, and for many years editorship of Useful Drugs.

In 1943, at the age of 75, Hatcher retired as a member of the Council, but in recognition of his unselfish interest in Council affairs and unselfish devotion to American medicine he was made immediately an honorary member by the Board of Trustees of the American Medical Association. He continued to receive the Council Bulletin until the time of his death and offered many helpful suggestions on the problems that arose. During his last fourteen years as a member Hatcher did not attend Council meetings because of the strain traveling would have placed on his heart. His inability to sit during these sessions was a continuous disappointment to Hatcher and to all other members. His comments were always timely and to the point; his knowledge widely recognized, and his friendliness, even in the face of firmness when he was convinced of a point, was evident to all who came in contact with him. His continuous association with Council activities over a period of forty years was extremely valuable in enabling him to propose immediate decisions. Hatcher's continuous search for new information and his appreciation of constructive criticism were characteristic and are evident in a letter which he wrote many years ago to the late William A. Puckner, who was then Secretary of the Council:

> We must not evade and think we are doing so well that we need not take note that there is room for improvement. I think that we should look constantly for better methods of meeting our problems, look for criticism and try to find fault with our own work that we can improve it.

No man was ever more anxious to receive criticism of his own work. Thus, it is no wonder that this man achieved and held such respect.

At the time of Hatcher's death, the Chairman of the Council reflected the feelings of all other members:

> "The chairman learned with deep regret that our fellow member Robert Hatcher died on April 1. He accepted membership in the Council soon after its foundation and served continuously until his death. 'Served' is not a figure of speech, for he gave himself wholeheartedly to every task that was assigned to him and worried that he could not do more. Indeed, his modesty led him to resign many times as he felt that he could not do enough, but we knew that the Council could ill afford to lose his meticulous work and prevailed upon him to stay on, much to his and our satisfaction."

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.
AUSTIN E. SMITH, M.D., Secretary.

NORMAL HUMAN SERUM (See New and Nonofficial Remedies, 1944, p. 534).

The following dosage form has been accepted:

HYLAND LABORATORIES, LOS ANGELES

Normal Human Serum: 250 cc. bottle. Preserved with merthiolate 1:10,000.

BISMUTH SUBSALICYLATE (See New and Nonofficial Remedies, 1944, p. 236).

The following dosage form has been accepted:

BURROUGHS WELLCOME & CO., INC., NEW YORK

'Hypoloid' Bismuth Subsalicylate in Oil with Chlorobutanol 3%: 60 cc. rubber capped bottle. A suspension of bismuth subsalicylate in peanut oil containing in each cubic centimeter bismuth subsalicylate 0.13 Gm. with 3 per cent chlorobutanol.

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SATURDAY, JULY 29, 1944

COUNCIL ON PHYSICAL THERAPY BECOMES COUNCIL ON PHYSICAL MEDICINE

At the nineteenth annual meeting of the Council on Physical Therapy during December 1943 a motion was passed unanimously recommending to the Board of Trustees that the name be changed to the Council on Physical Medicine. At the recent annual session of the American Medical Association in Chicago the Board of Trustees recommended to the House of Delegates, and the House of Delegates acted favorably on this recommendation; as a result, the Council on Physical Therapy has now become the Council on Physical Medicine.

The designation "physical medicine" is a more inclusive term. Physical agents are used not only for therapy but also for diagnosis. Hospital departments of physical medicine, when they employ electric tests for reaction of degeneration or perform such tests as the cold pressor test, are employing physical agents not for therapy but for diagnosis.

The Council has for some time interested itself in certain phases of occupational therapy, which is a branch of the broad field of physical medicine. The Council was informed that the American Occupational Therapy Association was anxious to have the Council give more attention to occupational therapy. Discussions between representatives of the Council and the American Occupational Therapy Association indicated that the association would welcome the inclusion of occupational therapy under a Council on Physical Medicine.

Under the following definition for physical medicine, the entire field can be covered by a Council on Physical Medicine: Physical medicine includes the employment of the physical and other effective properties of light, heat, cold, water, electricity, massage, manipulation, exercise and mechanical devices for physical and occupational therapy in the diagnosis and treatment of disease. The Council believed that it would be wise to appoint a special subcommittee of five physicians interested in occupational therapy who could help to bring this phase of therapy more fully under direct medical supervision.

Finally there is definite precedent for the use of the term "physical medicine," which has long been considered the most acceptable term by our British colleagues. The Conjoint Board of the Royal College of Physicians and the Royal College of Surgeons has just instituted a diploma in physical medicine.

With its new name the Council on Physical Medicine will continue to function as it has always functioned but will devote additional attention to problems of occupational therapy.

THE CELL THEORY IN PATHOLOGY

The manner in which the cell doctrine of Schleiden and Schwann was adapted to an interpretation of disease is interesting.[1] The idea that elementary cells, globules, vesicles or fibers may be united to form tissues was suggested in antiquity. The value of Schwann's theory depended on the morphologic and functional importance attributed to the nucleus. Unfortunately, coupled with it was the erroneous belief that cells originated within a formless blastema by a process of "crystallization"—actually a spontaneous generation.

The cell concept was introduced into the study of disease during the two decades beginning with the publication of Schwann's researches in 1838 and closing with Virchow's "Die Cellularpathologie," printed in 1858. At that time such histologic methods as are now employed were undeveloped. Tissues were placed in salt or sugar solutions, teased apart and examined in the fresh state. The only reagent in common use was acetic acid, which increased the prominence of the cell nuclei. The fixation, embedding, sectioning and staining technics paramount in modern microscopic studies were unknown. An appreciation of the achievements of the early histopathologists and an interpretation of their errors are possible only if these deficiencies in their technical methods are recognized.

Schwann's blastema theory, i. e. a structureless solid or fluid in which cells subsequently appear much as crystals arise in a supersaturated solution, appealed to the pathologists. These investigators thought they had found such a blastema in recent thrombi and fibrinous exudates. They observed that cells similar to the cells described by Schwann in normal tissues appeared within these substances after several days. Pus, organizing thrombi and exudates were therefore interpreted in the light of Schwann's hypothesis. The possibility of an infiltration or proliferation of cells into the thrombus from the adjacent tissue did not occur to observers for many years. One of the earliest records of this view is found in a footnote by Busk and Huxley to their translation of Kölliker's "Manual

1. Schlumberger, H. G.: The Origins of the Cell Concept in Pathology, Archives of Pathology, to be published.

of Human Histology," 1853. They wrote "There cannot be said to be any evidence of the occurrence of free cell development in animals, so long as in any case cited it is not shown that the first formed particles which make their appearance cannot have derived their origin from preexisting formed particles. . . . In pathological exudations, for instance, who shall determine that the first structural elements which appear, granules, free nuclei, exudation corpuscles, etc., are not directly derived either from the blood or from the tissue into which the exudation has taken place?"

Inflammation was considered to be the elaboration of an exudate derived from the blood. If the exudate was thin and watery it presumably lacked the necessary nutritive properties, and only a few granules or free nuclei could be engendered in it. The prognosis in such instances was grave. If, however, the exudate was thick, having the consistency of cream, it was thought to be rich in germinal substances and capable of producing many primitive cells. When the quantity of exudate was small the cells were thought to be directly converted into the tissue affected. The portion not used in cell production was thought to be resorbed or dried up. This served to explain healing by first intention, the small amount of fluid present in the wound being converted to epithelium at the surface and connective tissue in the deeper regions. If the quantity of exudate was somewhat greater and all of it converted into tissue cells, hypertrophy of the affected organ would result. When the amount of exudate was very large, many of the primary cells were not converted into tissue cells but washed away in the fluid medium as pus corpuscles. This concept of tissue formation seemed to lend support to the idea that a viscid yellow exudate was a "laudable pus."

A few investigators, notably William Addison, disagreed with this derivation of the pus cells, insisting that they were white blood corpuscles that had passed through the capillary walls into the tissues. As early as 1843, Addison recorded his microscopic observations on the web of a frog's foot which had previously been placed in warm water. He noted the peripheral position of the leukocytes in the dilated capillaries and their accumulation in the surrounding tissues. Although he did not witness the migration of the cells through the vessel wall, Addison insisted that it must be so and accounted for his failure on the ground that the "processes are too slow for us to follow from beginning to end all the actual stages."

Yet this work passed unnoticed. When it became clear that pus corpuscles like other cells must arise from preexisting cells, it was assumed that they were derived from epithelium or connective tissue. The discovery of tissue macrophages seemed to lend some support to this belief. In "Die Cellularpathologie" Virchow expressed skepticism of the intravascular origin of pus cells.

The first extensive application of the cell doctrine in pathology was made by Johannes Mueller in his study of tumors. Schwann had taken up the microscopic examination of tissues on the suggestion of Mueller and carried out his investigation in the latter's laboratory. As early as 1835 Mueller described what he called the "fat cells" in a lipoma. His book on tumors appeared in 1838, shortly after the publication of Schwann's work. In it Mueller has words of high praise for his pupil and wholeheartedly accepts the blastema theory, believing that "the germinal cells of carcinoma do not arise from preexisting fibers but develop independently from a true morbid fluid between the tissue cells." Mueller noted that among other cells present in cancers were some spindle shaped ones which he called "tailed corpuscles." Other investigators at once interpreted these to be specific for all cancers; this in spite of the fact that Mueller had warned against the overenthusiastic use of the microscope as a diagnostic aid. In fact, he said that "microscopic and chemical analysis will therefore never become a means of medical diagnosis; it would be ridiculous to wish this or even consider it possible." Nevertheless, for decades thereafter pathologists sought the "tailed corpuscles" much as their predecessors had searched for the philosopher's stone.

During the decade 1845 to 1855 microscopists were much concerned with the structure of connective tissue, bone and cartilage. Virchow did important work in this field and first clearly expressed the view that connective tissue is cellular in character and that the lacunae in bone contain cells which are related to those of cartilage and connective tissue. The investigations of embryologists on the cleavage of the egg cell, and of plant and animal histologists on the growth of adult tissue, cast increasing doubt on the origin of cells within a blastema.

In 1852 Remak wrote that "the pathological tissues are no more formed in an extracellular cytoblastema than are normal structures, rather they are derivatives of normal tissues of the organism." Three years later, speaking specifically of tumors, but including all tissue growth, Virchow coined the aphorism *omnis cellula e cellula*. However, he replaced the blastema with the connective tissue, finding in the latter the source of all neoplastic growth. His insistence on the derivation of carcinoma from connective tissue led to much confusion and was not definitely refuted for many years. Nevertheless, with the publication of "Die Cellularpathologie" in 1858, Virchow presented physicians with a concept of disease which, though modified, is generally applicable today.

Current Comment

DEMEROL WITHIN PURVIEW OF NARCOTIC LAWS

With the approval, July 1, by the President of a law enacted by Congress just prior to recess, the synthetic drug designated as isonipecaine was brought within the purview of the federal narcotic laws. This drug is marketed in the United States under the trade name of "Demerol." All manufacturers, wholesalers, retailers and practitioners procuring, prescribing or dispensing Demerol, if not already registered, must effect registration in the appropriate class under the federal narcotic law. They must also submit to the collector of internal revenue having jurisdiction, on or before September 1, an inventory on appropriate forms of all Demerol on hand as of July 1, 1944. Physicians must submit the required inventory on form 713, which may be obtained from the collector's office. Hereafter manufacturers of Demerol must tax stamp each package before sale or removal. Wholesalers, retailers and practitioners who have in their possession unstamped packages of Demerol, quantities manufactured prior to July 1, must affix to each package their own label or paster bearing the legend "In stock, inventory July 1, 1944," followed by the name or initials of the owner. Packages without stamps or without identifying labels after a reasonable time will be subject to possible seizure and forfeiture. Essentially, the effect of this law is to subject the use of Demerol to the same restrictions imposed on the use of narcotic drugs, with the exception that no preparation containing Demerol in any quantity is exempt. The House of Delegates at its June session recorded its approval of this legislation. During 1944, state narcotic laws in six states were amended to bring isonipecaine within their coverage—Kentucky, Mississippi, New Jersey, New York, South Carolina and Virginia.

THE DEMOCRATIC PLATFORM

A careful reading of the platform recently adopted by the Democratic party discloses the following language that may relate directly or indirectly to a health program:

> Beginning March 1933 the Democratic Administration . . . provided social security, including old age pensions, unemployment insurance, security for crippled and dependent children and the blind. . . .
>
> We pledge the continuance and improvement of these programs.
>
> . . . . . .
>
> We offer these postwar programs:
>
> A continuation of our policy of full benefits for ex-service men and women, with special consideration for the disabled. . . .
>
> The enactment of such additional humanitarian, labor, social and farm legislation as time and experience may require, including the amendment or repeal of any law enacted in recent years which has failed to accomplish its purpose.
>
> . . . . . .
>
> We reassert our faith in competitive private enterprise free from control by monopolies, cartels or any arbitrary private or public authority.

CIVILIAN DEFENSE AT HARTFORD CIRCUS FIRE

On July 6 a disastrous fire at the Ringling Brothers Barnum and Bailey Circus in Hartford, Conn., resulted in the death of 150 persons and injuries to more than 200. Taking the lead in caring for the victims was the Hartford civilian defense organization, which provided blood plasma. The transfusion administration sets from the New York City Civilian Defense Emergency Medical Service also were instrumental in saving the lives of many of those seriously injured and burned. Dr. John J. Bourke, medical assistant to the director of the U. S. Office of Civilian Defense, reached Hartford by plane from LaGuardia Field with 150 transfusion administration sets and extra filters which had been requested by the Hartford Emergency Medical Service. More than 500 blood plasma sets were available at the time of the fire, and additional units of dry plasma were provided immediately. The emergency medical service set up in Hartford in connection with the Office of Civilian Defense served an invaluable purpose in this disaster. The continuance of this and similar organizations after the war will doubtless receive favorable action.

HEALTH PLATTERS IN PENNSYLVANIA AND ARIZONA

Radio "platter" (transcription) broadcasts furnished by the Bureau of Health Education are being broadcast over a number of radio stations in Pennsylvania under the auspices of the Committee on Public Relations of the Medical Society of the State of Pennsylvania. WFBG at Altoona will broadcast Before the Doctor Comes. WCED at Dubois has a set of American Medicine Serves the World at War and will start weekly broadcasts July 17. Dodging Contagious Diseases will go on WISR, Butler, for twelve weeks beginning Saturday, July 15. WBAX at Wilkesbarre is running American Medicine Serves the World at War on Monday, Wednesday and Friday and Dodging Contagious Diseases and Before the Doctor Comes on Tuesday and Thursday. Other broadcasts are scheduled tentatively. Altogether, twelve radio stations in Pennsylvania have requested broadcasts including three in Philadelphia and two in Pittsburgh; in cases like these, "first come, first served," says the state medical society. These radio transcriptions are available to any state medical society whose committee or officers will make the necessary arrangements for broadcasting within the state. They are available also to county medical societies and to health departments with the approval of county medical societies. Recent communications from the Arizona State Medical Association [1] indicate that there is a steady demand for copies of the scripts from listeners. One Arizona radio station says "we have had more audience response both by mail and phone than any other educational program in [their] history. Many have commented to their personal physicians about the programs—all have been along the lines that the listener was surprised and pleased at the helpful quality of the programs."

1. Health Transcription Broadcasting in Arizona, J. A. M. A. 124: 1204 (April 22) 1944.

MEDICINE AND THE WAR

ARMY

INDUSTRIAL MEDICAL PROGRAM OF THE ARMY

The Army is very likely the largest single employer in the country today.[1] Not only does it operate its own arsenals, depots and industrial plants, but also the Surgeon General's Office is responsible for sanitation, hygiene and medical supervision over army owned contract operated installations which are located on military reservations. The chain of responsibility extends through the Surgeon General, who establishes policy and maintains advisory supervision, into the service commands, the army air forces, to the ports of embarkation under the control of the chief of transportation, and to the chief of ordnance.

In the Surgeon General's Office the Occupational Health Division functions in the Preventive Medicine Service. It establishes policy, gives technical advice, supervises the Army Industrial Hygiene Laboratory and maintains liaison with other governmental agencies concerned with industrial health and safety. The Army Industrial Hygiene Laboratory, located in the School of Public Health at Johns Hopkins University in Baltimore, surveys army industrial installations as to environmental hygiene and provides medical and engineering consultation to control occupational health hazards.

The plan of organization in each service command includes the appointment of a qualified industrial medical officer and a qualified sanitary corps officer as the industrial hygiene engineer, acting under the direction of the service command surgeon. These officers make inspections, recommend the installation of new or additional medical facilities, participate in industrial hygiene surveys and cooperate with other personnel in the service command in the control of absenteeism and the prevention of industrial accidents. Requests for assistance from the Office of the Surgeon General are transmitted by the commanding general of the service command.

The commanding general of the Army Air Forces makes use of the central agency set up in the Surgeon General's Office. He also is empowered to provide personnel for developing industrial medical services in army service forces commands and designates qualified medical officers and sanitary officers to conduct adequate industrial health programs. The chief of transportation acts in an identical capacity at the ports of embarkation.

In the installations themselves medical responsibility may reside in a medical officer, a contract surgeon or civilian physician as circumstances suggest. In any case the duties include physical examination (preplacement and periodic), emergency care, immunization, control of occupational health hazards, maintenance of proper reports and records, industrial hygiene consultation services, health programs, cooperation with safety programs and the necessary measures for a healthful work environment. In all of these services the responsible officer is assisted by the industrial hygiene engineer.

Special regulations apply to personnel. Civilian physicians qualify for assignment through civil service, or contract surgeons are employed to conduct the medical services at all army operated industrial plants. Such employment customarily follows after authorization by a service command and after clearance with the Procurement and Assignment Services. Funds are allotted by the service command. Registered graduate nurses not eligible for service in the Army Nurse Corps are generally employed in army operated plants. This rule can be modified only by special action of the commanding generals of the army service forces or army air forces. Supplies and equipment are available from the Surgeon General or appropriate medical department distribution depot.

1. Industrial Medical Program of United States Army, Circular 198, War Department, Washington, D. C., May 20, 1944.

COL. SANFORD W. FRENCH II RETIRES

Special orders were issued recently from the headquarters of the Fourth Service Command announcing that Col. Robert C. McDonald, commanding officer of the England General Hospital, Atlantic City, is replacing Col. Sanford W. French II as Fourth Service Command surgeon. Colonel French, who has been command surgeon for the past two and a half years, is on sick leave from the Lawson General Hospital. His retirement will end a military career of forty-two years' continuous service, eight years as chief petty officer in the Navy with service in Guam and the Philippine Islands and thirty-four years in the Army with service in Panama and at ten different posts within the United States.

In addition to heading the medical branch, Headquarters Fourth Service Command, Colonel French was the instigator of establishing eighty-nine allergy clinics in 1942 at general and station hospitals throughout the command. Another project which Colonel French was instrumental in establishing is the treatment of acute venereal diseases while patients are kept on a duty status. This project was pioneered in the Fourth Service Command in March 1942, but after a War Department report in 1943 it was made standard operating procedure for all service commands. The most recent program with which Colonel French has been affiliated is the reconditioning service for wounded men returning from overseas. Two years ago a small reconditioning service was set up in station hospitals, but it was not until recently that the need for a definite program was recognized by the Surgeon General's Office in Washington. The Daytona Beach Convalescent Hospital, under command of Col. Philip L. Cook, is the latest Fourth Service Command installation giving full time to this new reconditioning program. Following his retirement, Colonel and Mrs. French will live in San Antonio, Texas.

EIGHT DECORATED FOR TYPHUS CONTROL SERVICE

The War Department has announced the award of the Bronze Star Medal to an officer of the Sanitary Corps and seven enlisted men of the Medical Department who conquered a virulent form of typhus on Goodenough Island in the South Pacific. Their citation states that, "Though fully aware of the danger of this particularly virulent form of typhus and its high mortality rate, they voluntarily applied themselves to the task of eliminating the causes of it. Their zeal and thoroughness resulted in the rapid and complete control of the disease on this island." Their services were rendered during the periods from Dec. 27, 1943 to Feb. 7, 1944 and March 13 to 22, 1944. The awards were made to:

Capt. Charles Lose III, East Cranford, N. J.
Staff Sergeant John O. Beasley, Charleston, W. Va.
Sergeant William G. Osborn, Bronx, New York.
Technician (4th grade) Joseph H. Downing, Cranford, N. J.
Technician (4th grade) Joseph S. Burat, Swedesburg, Pa.
Corp. Stephen P. Findeis, Linden, N. J.
Technician (5th grade) Nicholas A. Barbarotto, Bronx, N. Y.
Technician (5th grade) William M. Stokes, West Collingswood, N. J.

ARMY HOSPITALS MERGE

The Fort Benjamin Harrison Station Hospital (Fort Benjamin Harrison, Indiana) will consolidate with the Billings General Hospital, it was announced recently, by Col. Henry E. Tisdale, commanding officer of the fort. Major S. T. Stenberg, post surgeon, will have charge of a dispensary to be established for personnel now being cared for in the station hospital. Dispensary cases requiring hospitalization will be transferred to Billings Hospital. Many buildings now utilized

by the station hospital will be transferred to the jurisdiction of Col. Harry L. Dale, commanding officer of Billings Hospital. All medical activities of the reception center, the post sanitary service, dental service and physical examination required for fort personnel will continue under the jurisdiction of Colonel Tisdale, who states that the consolidation of these hospitals is a step toward more economical and efficient operation.

AIR EVACUATION AIDS WOUNDED IN BURMA

Col. Don Flickinger, wing surgeon of the AAF Air Transport Command, India-China Wing, who recently returned to the United States for reassignment, told of the increasing number of sick and wounded being evacuated by air transport in the China-Burma-India theater of operations and disclosed that among them were hundreds of Chinese soldiers wounded in action against the Japanese in Burma. Hundreds of other casualties of the Allied ground forces fighting in Burma also are being evacuated by air, the total number of patients in March being 1,106 and in April 1,342. Six regular air evacuation "runs," one of them over the Hump, are made by the Air Transport Wing, each week, the patients on each being cared for by flight surgeons and flight nurses.

Air evacuation medical personnel are facing the same hazards that the ATC pilots do on such runs. In one instance a flight nurse, a flight surgeon and an enlisted surgical technician were wounded when a Japanese bomber bombed and strafed their field just as they were taking off in a transport plane. Colonel Flickinger stated that the general health of the flying personnel making the dangerous trips over the Hump, taking in supplies to China, was good. Many factors, such as better sanitation, food, living conditions, emergency rescue, training and rotation of air crews back to the United States, have greatly improved the physical and mental status of the personnel. Colonel Flickinger said that the three principal reasons for the good standard of health maintained in the wing were the basic toughness of the American soldier, the vigilance of medical officers and the support and backing of the commanding general in all recommendations by the flight surgeon.

In August 1943 Colonel Flickinger parachuted with medical supplies to the aid of 20 survivors of a four engine transport plane which crashed in a wild region of Burma. The survivors included two U. S. government officials, a radio news commentator and Chinese army officers. Colonel Flickinger was awarded the Legion of Merit in 1942 for his experiments with devices to aid in sighting pilots forced down at sea. He also holds the Distinguished Flying Cross, Soldier's Medal, Air Medal and a Presidential unit citation.

ARMY TAKES OVER MASON GENERAL HOSPITAL

The Mason General Hospital, Brentwood, L. I., N. Y., was turned over formally to the Medical Corps on June 22 and was dedicated to the recovery of psychoneurotic casualties from both battle and training areas. Major Gen. Norman T. Kirk, Surgeon General of the Army, gave the dedicatory address. Built by the state of New York as a unit of Pilgrim State Hospital, which it adjoins, the Mason General Hospital can house 1,348 patients normally and 2,000 in an emergency. It has twenty-eight wards on seven floors in four modern fireproof pavilions radiating from central kitchens and mess rooms on each floor. The Army also has established at the hospital its special school for training medical officers in psychoneurology. It already has 1,000 on such duty and will add seventy graduates of classes which go through the hospital every three months. These graduates go directly to the front. The faculty of the school is headed by Col. William C. Porter.

The hospital was named in honor of Brig. Gen. Charles F. Mason, who had a distinguished career in the Medical Corps and who died in 1922.

Col. Steve C. Odom is the commanding officer of the hospital.

MEDICAL ADMINISTRATIVE OFFICER QUOTAS RAISED

An increase in quotas for admissions to officer candidate courses leading to commissions in the Medical Administrative Corps of the Army was announced July 12. The new quotas permit acceptance of 2,000 men within the next eight weeks for seventeen week courses. The increase will permit more Medical Administrative Corps officers to free members of the Medical Corps for professional duties. Under the new plan the Officer Candidate School at Carlisle Barracks, Pennsylvania, was reopened on June 24. Three more classes of 500 men will be admitted to Camp Barkeley at two week intervals during the summer. Two classes of 250 men each will start, four weeks apart, at Carlisle Barracks in addition to the class now in training there.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Samuel B. Prevo

Lieut. Col. Samuel B. Prevo has been awarded the Soldier's Medal by Major Gen. C. L. Chennault for distinguishing himself by heroism in his capacity as surgeon of the East China Wing of the 14th U. S. Air Force. Dr. Prevo, who was formerly surgeon with the AVG's in China, was on duty last December as medical officer of the day when a heavy bombardment plane loaded with bombs crashed while taking off. Some of the bombs were delayed action type whose fuses had been damaged by the crackup, endangering the lives of all in the crash area. Dr. Prevo, nevertheless, aided in extinguishing the fire and then worked continuously for eight hours helping to extricate crew members from the wreckage and treating the injured. During this period he crawled into the plane several times to administer sedatives to men trapped in the plane. The citation accompanying the award read "By exposing himself to great personal danger in order to save the lives of others he demonstrated heroism in keeping with the finest traditions of the American military service." Dr. Prevo graduated from George Washington University School of Medicine, Washington, D. C., in 1937 and entered the service in February 1941.

Captain Henry H. Hancock

For crawling through minefields and enemy fire to rescue a wounded soldier during the Sicilian campaign, Capt. Henry H. Hancock was presented the Silver Star for gallantry in action. The citation accompanying the award read "During an attack on . . . Sicily, on . . . July 1943, a soldier from Company C, . . . Infantry, was wounded in the chest by machine gun fire and was bleeding profusely. In order for medical aid to be rendered to him, it was necessary for Captain Hancock to pass through enemy minefields and barbed wire, in view of enemy positions. Captain Hancock, with utter disregard for his own safety and with full knowledge of the existing dangers, worked his way forward through these obstacles and was successful in effecting the evacuation of the soldier. The speedy rendition of this medical aid and the unselfish, courageous action of Captain Hancock resulted in the saving of the wounded soldier's life. The gallant conduct of this officer was an inspiration to all who witnessed it and reflects great credit on him and the military service." Dr. Hancock graduated from the University of Virginia Department of Medicine, Charlottesville, in 1937 and entered the service Sept. 20, 1942.

Captain Emory C. Kinder

Capt. Emory C. Kinder of Kingstree, S. C., has been awarded the Soldier's Medal in England, where he is a flight surgeon with an Eighth AAF Flying Fortress group. Dr. Kinder was decorated for heroism in risking his life to save a wounded gunner who was pinned in a flying fortress by a live bomb which entered the tail of the plane. After the fortress landed with the bomb embedded in its tail Dr. Kinder entered the ship and freed the tail gunner, although the bomb was in danger of exploding any moment. Dr. Kinder graduated from the Medical College of the State of South Carolina, Charleston, in 1939 and entered the service June 13, 1942.

NAVY

NAVY AWARDS AND COMMENDATIONS

Captain French Robert Moore

The Legion of Merit was recently awarded to Capt. French Robert Moore "for meritorious conduct in the performance of outstanding service prior to and during action against Japanese forces on Tarawa, Gilbert Islands, Nov. 20-28, 1943. He effectively coordinated the efforts of medical units with the infantry teams and by his superb professional skill and knowledge contributed to the combat efficiency of the division. The fine record of the performance of medical units on Tarawa was in a large part due to his outstanding leadership and courage in the face of the enemy. On November 20, under heavy enemy fire, he participated in the rescuing of a number of wounded from under the pier and from damaged and stranded landing boats. His valorous action in rescuing these wounded, rendering first aid treatment and subsequently transporting them to a troop ship under fire was responsible for the saving of their lives. His thorough and complete spirit of cooperation, coupled with his painstaking forethought in organization and indefatigable and tireless devotion to duty, were of invaluable assistance and in keeping with the highest traditions of the United States Naval Service." Dr. Moore graduated from the University of Oregon School of Medicine in 1926 and entered the service the same year. He is now on duty with the planning section of the Bureau of Medicine and Surgery of the Navy Department, Washington, D. C.

Captain Richard A. Kern

A Letter of Commendation was recently presented to Capt. Richard A. Kern, formerly of Wynnewood, Pa., "For meritorious and efficient performance of duty while serving as Medical Consultant on the Staff of the Commander South Pacific Area and South Pacific Force during the period from August 1943 to February 1944. Captain Kern, in discharging his duties, made his services available to every medical officer in the South Pacific Area, visiting every medical facility many times. He traveled throughout the forward and combat areas and worked with the medical officers in the front line of combat operations on Bougainville, British Solomon Islands. At all times his objective was to improve the treatment of the sick and wounded, and no undertaking was too great, nor any detail too small, to bring forth his best efforts toward that end. His tireless endeavors, professional ability and devotion to duty were in keeping with the highest traditions of the United States Naval Service." Dr. Kern graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1914 and entered the Navy Feb. 2, 1942.

Lieutenant Commander Milo A. Youel

The Navy and Marine Corps Medal was recently presented to Lieut. Comdr. Milo A. Youel "for heroic conduct in rescuing a comrade from drowning at Flamingo Beach, Culebra, on Jan. 25, 1941. Sighting a man struggling in the treacherous waters and apparently unable to help himself, Lieutenant Commander (then Lieutenant, Junior Grade) Youel gallantly risked his life in order to effect a rescue. Courageously diving into the heavy surf, he reached the side of the exhausted man and with extreme difficulty succeeded in bringing him to safety. His personal valor and daring initiative in the face of grave peril were in keeping with the highest traditions of the United States Naval Service." Dr. Youel graduated from the University of Minnesota Medical School, Minneapolis, in 1940 and entered the service July 24, 1940.

Lieutenant Francis Bruce Monroe

Lieut. Francis B. Monroe, formerly of Iron River, Mich., was recently awarded the Bronze Star Medal for service as set forth in the following citation: "For meritorious service as Medical Officer of a Boat Base during offensive operations in the Rendova-New Georgia Area, Solomon Islands, from June 30 to Aug. 5, 1943. Working tirelessly and with complete disregard for his own personal safety throughout the entire campaign leading up to and including the capture of Munda, Lieutenant Monroe unhesitatingly proceeded to all forward areas where medical attention was needed and, skilfully administering first aid to the wounded under extremely hazardous conditions, was largely responsible for keeping the number of casualties to a minimum. Lieutenant Monroe's courageous conduct and unwavering devotion to duty in the face of grave peril were in keeping with the highest traditions of the United States Naval Service." Dr. Monroe graduated from the University of Chicago School of Medicine in 1940 and entered the service July 17, 1942.

Lieutenant Commander Henry Perkins Hopkins

The Bronze Star Medal was recently awarded to Lieut. Comdr. Henry P. Hopkins, formerly of Chatham, Mass. The citation read "For meritorious service as Regimental Surgeon attached to a Marine Regiment during operations in the Solomon Islands Area from Sept. 21, 1942 to July 29, 1943. Executing his duties under the most hazardous and trying battle conditions during three major engagements in the Matanikau River area on Guadalcanal, Solomon Islands, Lieutenant Commander Hopkins displayed exceptional zeal, courage and outstanding skill in ministering to the men under his professional care. Responsible for the health and welfare of his regiment during the rehabilitation stage, he successfully handled the many and varied problems of sanitation in the tropics and reduced to a minimum the hazards of infection and disease. His conduct throughout his vital combat period was in keeping with the highest traditions of the United States Naval Service." Dr. Hopkins graduated from McGill University Faculty of Medicine, Montreal, in 1932 and entered the service Sept. 9, 1941.

Commander Emmett L. Calhoun

The Silver Star Medal was recently awarded to Comdr. Emmett L. Calhoun. The citation accompanying the award read "Comdr. Emmett L. Calhoun (MC), U.S.N.R., Hoquaim, Wash.: Serving in the U. S. S. *Northampton* in the Solomons 26-27 Oct. 1942, he insisted on manning his station although weakened by a major emergency operation. He was seriously injured during an attack but next day, when 114 wounded survivors were brought aboard, he worked tirelessly for four days to relieve their suffering." Dr. Calhoun graduated from Northwestern University Medical School, Chicago, in 1925 and entered the service Feb. 28, 1942.

HOSPITAL CORPS OFFICERS

Seventy-two Hospital Corps officers completed a course in hospital administration at the National Naval Medical Center July 5. These officers are now being assigned to various naval hospitals throughout the United States. A new class of seventy-five Hospital Corps officers has been placed under orders to report to the U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md., for a six months course in hospital administration. On completion of this course they will also be assigned to various medical department activities in the United States for duty.

A class of thirty-five Hospital Corps officers completed a special course in epidemiology at the National Naval Medical Center July 17. These officers will be assigned to various epidemiology units for duty.

NAVY PERSONAL

Lieut. Sara G. Krout, Dental Corps, U.S.N.R., is the first woman dentist to be appointed for service in the Navy. She was recently enrolled in the Women's Reserve, and her nomination for active duty is now pending. Dr. Krout is a graduate of the Schroeder College of Dentistry and Institute of Natural Sciences and the University of Riga (Latvia). She was naturalized in Chicago in 1921 and has been in private dental practice since 1928.

MISCELLANEOUS

FIRST BIRTHDAY OF U. S. CADET NURSE CORPS

The first birthday of the U. S. Cadet Nurse Corps was observed by a flag presentation ceremony on the steps of the U. S. Public Health Service building, July 1, in the nation's capital. The new white, silver and scarlet banner was presented by Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, to Miss Lucile Petry, director of the Corps. It carries the emblem of the Maltese cross, distinguished insigne of the 100,000 Cadet Nurses now preparing, with the aid of full federal scholarships, for positions in essential civilian or military nursing. Frances P. Bolton, Congresswoman from Ohio and sponsor of the Bolton act creating the corps, was

Banner (at left) presented to United States Cadet Nurse Corps.

present at the ceremony. Other guests included Watson B. Miller, assistant administrator of the Federal Security Agency; Major Gen. Norman T. Kirk, Surgeon General, U. S. Army; Vice Admiral Ross T. McIntire, Surgeon General, U. S. Navy; Dr. L. R. Thompson, Dr. R. E. Dyer, Dr. Carl Michel, Dr. W. T. Wright Jr., Mr. John K. Hoskins, Assistant Surgeon Generals of the U. S. Public Health Service, and Senior Surgeon Dr. V. M. Moore. Special events marking the first birthday celebration on the U. S. Cadet Nurse Corps also took place in New York, Chicago, Hollywood, Fort Worth and a few other cities.

Youngest of the women's uniformed organizations, the U. S. Cadet Nurse Corps has attracted thousands of members from all walks of life to serve in one of the finest professions open to women. These recruits, identified by their trim gray uniforms marked by silver Maltese crosses and red epaulets, are helping to make it possible for hospitals to release graduate nurses for more highly specialized civilian nursing positions and for duty with the armed forces at home and overseas.

PUBLIC HEALTH UNDER HITLER

According to *LaCroix* of March 2, 1944 (France) Professors Guillain and Mollaret have reported to the Medical Academy a number of serious poisoning cases among factory workers, which have paralyzed them in the upper limbs and eventually caused a general paralysis. An investigation disclosed that the poisoning was due to the utilization of industrial oils brought home by the workers to make potato chips. The academy recommended the public authorities to request all industrialists to warn the workers against the toxic qualities of lubricating oils.

According to *Universul* of March 6, 1944 (Rumania), at a meeting of the Council of Collaboration of the country of Cetates Alba (Ackermann) it was pointed out that all necessary preventive measures against typhus have been taken. No villagers are admitted into towns on market days except on producing a certificate to the effect that they have been properly deloused. In view of the insufficiency of the medical personnel needed for combating the current epidemics it was approved that two more physicians, refugees from Kirovograd, should be accepted into service.

Algemeen Handelsblad of March 10, 1944 (Netherlands) reports that, as in 1943, school children and infants will be supplied with vitamin C tablets this spring as from March 27. Pupils of all council and private schools, preparatory, ordinary and special elementary schools, extended elementary schools, secondary schools and schools preparing for universities and handicraft schools will be given the tablets. This applies to Dutch as well as to German children.

Berlingske-Tidende of April 28 (Denmark) reports that Denmark is now suffering from a serious shortage of physicians. "This shortage is caused by the fact that about 100 Danish physicians and especially assistant physicians are for the time being unable to practice in this country.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Eduration and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL July 22, page 855)

GEORGIA

Crawford W. Long Memorial Hospital, Atlanta. Capacity, 269; admissions, 9,737. Dr. L. C. Fischer, Administrator (interns, October 1).

ILLINOIS

Belmont Community Hospital, Chicago. Capacity, 125; admissions, 3,778. Miss Gertrude F. Scofield, Superintendent (interns).

MASSACHUSETTS

Worcester Hahnemann Hospital, Worcester. Capacity, 151; admissions, 3,372. Miss Erna M. Kuhn, R.N., Superintendent (interns).

MICHIGAN

St. Lawrence Hospital, Lansing. Capacity, 230; admissions, 6,897. Sister M. Assisium, Superintendent (interns).

MINNESOTA

Bethesda Hospital, St. Paul. Capacity, 180; admissions, 6,083. Rev. L. B. Benson, Superintendent (interns).

NEBRASKA

Lincoln General Hospital, Lincoln. Capacity, 213; admissions, 4,574. Mr. Robert B. Witham, Administrator (interns).

NEW YORK

Auburn City Hospital, Auburn. Capacity, 240; admissions, 6,844. Mr. Jerome F. Peck Jr., Superintendent (mixed residencies).

ORGANIZATION SECTION

WASHINGTON LETTER

(From a Special Correspondent)

July 22, 1944.

Advantages of a Program for Athletics

One view on national physical fitness which is widely held here but which has not been given official expression is that sooner or later sponsors and promoters of sports, both amateur and professional, will have to give primary interest to the health aspect. At present these sponsors and the participating athletes are largely the beneficiaries of any accruing financial, publicity or prestige advantages, and it is believed that the youth of the nation can be helped to participate considerably more from the standpoint of physical well-being.

A letter recently received from a navy ensign who is in the Pacific contained the statement "almost every invasion plan out here seems to be: After landing, remove dead bodies and commence laying out a baseball diamond." This, according to the informant, indicates the attitude of men on the fighting fronts toward sport, which, he added, is of course a point that needs no arguing. Most healthy young people like sports and take part in one or another of them. But it does emphasize that when our boys come back we are likely to have an even more sport minded nation. "The sports world itself must soon take up its share of this job of improving national physical fitness. Just as physical education officers and doctors throughout the United States are endeavoring to improve standards of health and physical fitness, so must every leader in sports. Physical fitness is an over all responsibility of the sports fraternity, and it is high time they assumed that responsibility."

The progressive stand taken by Russia in refusing to allow her supply of doctors to be drained away into fighting services was mentioned as an attitude toward physical fitness that might be emulated in this country. It was pointed out that the Russian nation makes physical culture an integral part of the national program of sports. A report by the chief of the physical culture department of the Russian All Union Council of Trade Unions and president of the National Association of Gymnasts reveals the emphasis that the Soviet gives to sports among industrial and office workers. For instance, trade unions alone have 212 stadiums, 1,559 athletic fields, 420 skiing clubs, 238 water sports clubs, 552 gymnasiums, 20 athletic clubs, 29 alpine camps and 4 cycling tracks. Prior to the war the membership of the athletic societies included 170,000 trackmen, 166,200 volley ball players, 157,000 skiers, 135,400 gymnasts, 237,600 hunters, 114,000 chess players, 103,000 soccer players and over 300,000 alpinists. Most of these are now fighting against the Nazis, many having been decorated for distinction in action.

These figures might not appear significant in comparison with numbers of athletes in one segment of the American population, but they were mentioned as indicating how health consciousness can be developed in a program of organized sports.

Definite progress is believed here to come from the plans for National Physical Fitness Year formulated jointly by the American Medical Association and the National Council on Physical Fitness. It is acknowledged that much can be done to remedy the drastic national situation revealed in draft rejection figures by emphasizing physical conditioning during the twelve months commencing September 1. But it is believed that this emphasis should continue indefinitely. The platform recommended for approval by the National Council on Physical Fitness at the July 27 and 28 meeting in Washington is regarded as a positive step in this direction. While this platform rightfully stresses the fact that attainment of physical fitness is primarily an individual responsibility, the problem would be made much easier if all the dramatization and inspiration that organized sport can promote were to back up the individual. Sports world leadership would advantageously complement the leadership expected of education, medicine, dentistry, public health, industry, labor "and other organized groups."

With sports and recreations now available for almost every one, it would give an added incentive if the public at large would learn that our national pastimes were being promoted for other purposes besides enriching or glamorizing a few lucky individuals. And sports, so efficiently organized professionally and in the amateur field, have the facilities already available into which national physical fitness could be incorporated as an integral function.

WOMAN'S AUXILIARY

Minnesota

At the Minnesota state convention held in Rochester, April 13-14, the auxiliary's projects for the year were given as cadet nurse requirement, collection of medical and surgical relief supplies, making of dressings for a cancer hospital, the dissemination of cancer control information, the placing of *Hygeia* in schools and clubs, and a thorough study of the Wagner-Murray-Dingell bill.

Mississippi

The Mississippi auxiliary held its annual state convention May 9-10 with Mrs. Eben J. Carey, national president, the guest of honor and speaker.

New York

The Nassau County auxiliary of New York has 159 members, 49 of whom are wives of men in service. These members have done 6,000 hours of war work, given $100 to the Physician's Home Fund, provided speakers to talk on legislation and donated *Hygeia* to eleven schools and seventeen libraries.

Oregon

The Woman's Auxiliary to the Oregon State Medical Society has a room in the University of Oregon Medical School Library where are displayed on shelves a collection of historical medical books. Many collections have been added recently, among them a display of Japanese medical equipment found in shell holes on one of the Gilbert Islands. Others are old medical books and instruments belonging to pioneer Oregon physicians.

Pennsylvania

The Woman's auxiliary to the state of Pennsylvania began its Medical Benevolence Fund in 1927 with the sum of $100. Since then the contributions have reached $56,667. Mrs. Walter Orthner, the president, writes "Words can never express the great good this money has done."

Tennessee

Mrs. W. A. Ruch, president of the Woman's Auxiliary to the Tennessee Medical Association, has visited every auxiliary in her state. She is also a worker in the Red Cross, as chairman of nutrition in Memphis and Shelby counties, and chairman of the Cutting of Surgical Dressings.

Virginia

The Woman's Auxiliary to the Nothhampton-Accomack Medical Society of Virginia held its quarterly meeting at the home of Mrs. Joseph E. Gladstone at Exmore recently. Rev. W. K. Haddock spoke on "The Five Tensions in the World Today." The next meeting will be an all day picnic at the cabin of Mrs. W. L. Cosby at "Silver Beach" on July 11.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Paul Bucy to Give Gorgas Lecture.—Dr. Paul C. Bucy, professor of neurology and neurologic surgery, University of Illinois College of Medicine, Chicago, will deliver the annual lecture of the Gorgas Medical Society at the University of Alabama School of Medicine, University, August 4. His subject will be "Movement and the Cerebral Cortex."

CONNECTICUT

Alvarenga Prize Awarded to Gervase Connor. — The College of Physicians of Philadelphia on July 14 awarded its Alvarenga Prize to Dr. Gervase J. Connor, instructor in surgery, Yale University School of Medicine, New Haven, for his work on "Anterior Cerebellar Function, an Analytical Study in Functional Localization in the Cerebellum in Dog and Monkey." The Alvarenga Prize was established by the will of Pedro Francisco da Costa Alvarenga, Lisbon, Portugal, an associate fellow of the college of physicians, "to be awarded annually by the College of Physicians on each anniversary of the death of the testator, July 14, 1883, to the author of the best memorial on any branch of medicine which may be deemed worthy of the prize." The college usually makes this award for distinctive published work and invites the recipient to deliver an Alvarenga Lecture before the college. In the recent instance the college awarded the prize for an "exceptionally important manuscript submitted in competition."

DISTRICT OF COLUMBIA

Medical Mission Goes to Study Aleutians.—A three man medical mission was to leave early in July for a visit in the Pribilof Islands in the Bering Sea to help local medical personnel to study and examine 400 Aleut natives who recently were repatriated after a two year stay in southeastern Alaska. Members of the mission include Dr. William A. Morgan, Dr. Roy Lyman Sexton and R. K. Thompson, D.D.S., all from Washington.

Latin American Visitors. — Marcelo Martínez Repetto, hematologist of Mérida, Mexico, has arrived in Washington at the invitation of the Department of State for three months' study and observation. —— Dr. Ernesto Cofiño, professor of pediatrics on the Faculty of Medicine at Guatemala City, is also a guest of the state department for official study of child welfare programs in this country. —— Dr. Amadeo Grosso Rossi, director of the Durazno Hospital, Durazno, Uruguay, and public health supervisor for the Durazno Department, which has some forty-five hospitals in all, is also a guest of the state department and is visiting the United States to study surgical practice and teaching technics.

ILLINOIS

Personal.—Dr. William R. Roberts, Cissna Park, and Dr. James McIlwain, Okawville, were recently made members of the fifty year club of the Illinois State Medical Society.

Special Society Elections. — Dr. Paul P. Youngberg, Moline, was elected president of the Iowa-Illinois Central District Medical Association at its recent annual meeting. Other officers include Dr. Glen W. Doolen, Davenport, Iowa, vice president, and Drs. James Dunn, Davenport, and Florens E. Bollaert, East Moline, who were reelected secretary and treasurer respectively.——Dr. David Slight was chosen president of the Illinois Psychiatric Society at its annual meeting in May. Dr. Joseph A. Luhan is the vice president and Dr. Frances Hannett the secretary-treasurer. All are of Chicago.

Chicago

Rush Alumni Election.—Dr. Hillier L. Baker was elected president of the alumni of Rush Medical College at a luncheon recently. Drs. William S. Horn, Fort Worth, Texas, Willson B. Moody, Omaha, and Franklin R. Nuzum, Santa Barbara, Calif., were chosen vice presidents. Dr. John M. Dorsey was reelected secretary-treasurer.

Male Volunteer Aids at Presbyterian.—A corps of male voluntary aids has been working at Presbyterian Hospital. After fourteen lectures and demonstrations in technics of taking temperatures, changing beds and other duties, the men started to work on June 26. In general the men volunteers rotate on a 6 to 10 p. m. shift, three or four of them working at a time.

Theodore Wachowski Temporarily in Charge of Radiology Department.—Dr. Theodore J. Wachowski, assistant professor of radiology and assistant director and chief of x-ray therapy in the Research and Educational Hospitals, University of Illinois, outpatient tumor clinic, on a temporary basis has been appointed in charge of the department of radiology, University of Illinois College of Medicine, pending the selection of a permanent successor to the late Dr. Adolph Hartung.

Dr. Kretschmer Receives Honorary Degree.—Dr. Herman L. Kretschmer, President of the American Medical Association, on June 6 received the honorary degree of doctor of science from Northwestern University. Dr. Kretschmer graduated at Northwestern University Medical School in 1904. According to the citation accompanying the degree, Dr. Kretschmer is a loyal alumnus whose contributions to science, teaching and organized medicine have brought great credit to his alma mater.

Health Talks for the Public.—Dr. Josiah J. Moore, president of the Chicago Medical Society and treasurer of the American Medical Association, gave the first lecture, July 26, in a series of popular health talks for the public sponsored by the Chicago Medical Society and given at the Museum of Science and Industry. Dr. Moore's subject was "Facts About Cancer." Other speakers will be:

Dr. Samuel M. Feinberg, August 2, Allergy, Facts and Fiction.
Dr. James H. Hutton, August 9, Your Glands and What They Do To and For You.
Dr. Edward E. Piszczek, August 16, Present Day Knowledge of Infantile Paralysis.
Dr. Andrew C. Ivy, August 23, Aviation Medicine.
Dr. Austin E. Smith, August 30, Modern Miracles in Drug Warfare.

Physicians Cited by University of Chicago.—On June 10 three physicians were included among a group cited by the University of Chicago, June 10, as "useful citizens": Drs. Margaret Bell, Ann Arbor, Mich., school of medicine class of 1921; Harry J. Corper, Denver, school of medicine class of 1911 and Oliver Perry Kimball, Cleveland, who served his first medical year at the university in 1913-1914. Dr. Kimball for years sponsored and collected funds from Cleveland alumni to underwrite a local scholarship at the university. Dr. Bell is chairman of the physical education department for women and physician in the student health service at the University of Michigan. Dr. Corper is assistant professor of medicine at the University of Colorado School of Medicine, Denver. The citations are awarded by the university for unselfish and effective service to the community.

Seminar on Industrial Medicine and Surgery. — The American Mutual Liability Insurance Company sponsored a war seminar on industrial medicine and surgery at the Stevens Hotel, Chicago, July 12-13. A report on the end results of ninety-two operations for intervertebral disks was presented by Drs. Henry C. Marble, Boston; Eric Oldberg, Paul B. Magnuson and William A. Bishop, Boston. The treatment of burns and lessons learned from the Cocoanut Grove Disaster was presented by Dr. Charles C. Lund, Francis H. L. Taylor, Ph.D., and Dr. Stanley M. Levenson, Boston. Other speakers were:

Dr. Walter S. Priest, Penicillin Therapy.
Dr. Hollis E. Potter, The Wedge Shaped Vertebra.
Dr. Oscar A. Sander, Milwaukee, Health Hazards of Electric Welding.
Dr. Paul G. Dick, X-Ray Aspects.
Dr. Dallas B. Phemister, Shock and Blood and Plasma Therapy.

The doctor's part in the job placement of disabled veterans was discussed by Dr. Bishop, Col. Robert H. Kennedy, M. C., Dr. Lewis J. Pollock and Mr. Arthur H. Johnson, Boston.

KANSAS

State Medical Election. — Dr. William P. Callahan, Wichita, was chosen president-elect of the Kansas Medical Society at its recent annual session and Dr. Marion Trueheart, Sterling, was installed as president. Dr. Franklin R. Croson, Clay Center, is the secretary.

LOUISIANA

Robert Strong Resigns at Tulane. — Col. Robert A. Strong, M. C., has resigned as professor and head of the department of pediatrics, Tulane University of Louisiana School of Medicine, New Orleans. According to the *Bulletin* of the Orleans Parish Medical Society Dr. Ralph V. Platou, who

has been serving as acting head of the department since Colonel Strong went into service, has been named to the position. Dr. Platou graduated at the University of Minnesota Medical School, Minneapolis, in 1936 and served there as clinical assistant in pediatrics until he joined Tulane.

Ochsner Foundation Offers Fellowships. — The Alton Ochsner Medical Foundation, 3503 Prytania Street, New Orleans, announces the availability of a number of fellowships in various branches of surgery and medicine. Appointments will be made for a period of one year subject to renewal for a total of three years. The fellows will be encouraged to register in the Graduate School of Tulane University of Louisiana, where, if accepted, they can work toward an advanced degree. The Ochsner Foundation, of which Dr. Dean H. Echols, New Orleans, is medical director, was created in January. It is a nonprofit organization, chartered under the laws of the state of Louisiana for scientific, educational, charitable and literary purposes. Directors of the foundation are:

Mr. Theodore Brent, president of the Mississippi Shipping Company.
Dr. Edgar Burns, professor of clinical urology, Tulane University of Louisiana School of Medicine, New Orleans.
Dr. Guy A. Caldwell, professor of orthopedics at Tulane.
Dr. Francis E. Le Jeune, professor and head of the department of otolaryngology of the department of otolaryngolgy at Tulane.
Mr. J. Blanc Monroe, attorney.
Dr. Edward William Alton Ochsner, William Henderson professor of surgery and head of the department of surgery at Tulane.
Dr. Curtis H. Tyrone, New Orleans.

An announcement stated that, although a number of the trustees are on the faculty of the Tulane school of medicine, the Ochsner Foundation has no official connection with the school.

MICHIGAN

George Cummings Named Director of Laboratories.—Dr. George D. Cummings, associate director, bureau of laboratories, Michigan State Department of Health, Lansing, has been appointed director of the department's bureau of laboratories. He succeeds the late Clifford C. Young, D.P.H., Lansing, who had held the position since 1918.

Dr. Humphreys Appointed Director of Mental Hygiene. — The state hospital commission has named Dr. Edward J. Humphreys, Coldwater, as director of mental hygiene to succeed Dr. Frank F. Tallman, Lansing, resigned. Dr. Tallman has accepted a similar position in the Ohio State Department of Health (THE JOURNAL, June 24, p. 589). Four child guidance clinics, established by the Michigan legislature, will begin functioning in September in Wayne County, Pontiac, Grand Rapids and Ypsilanti.

NEW YORK

Typhoid Carriers.—A total of 438 typhoid carriers, exclusive of those in state institutions, were under supervision in upstate New York at the close of 1943. Twenty-eight new carriers were added to, and 27 were removed from, the register during the year, according to *Health News*. Sixteen were discovered as a result of epidemiologic investigation of sporadic cases of typhoid, 7 by means of release cultures, 2 on the basis of information furnished by the New York City Department of Health and 1 was discovered accidentally at the time of surgical drainage of the gallbladder. Two previously discovered carriers were added to the register; these carriers had been residing temporarily out of the state. Of the 27 carriers whose names were removed from the register, 17 died, 8 carriers were removed because of change of residence to a community outside the jurisdiction of the department and 2 were removed from the active list because of commitment to state institutions.

New York City

Graduate Course in Clinical Medicine.—Columbia University College of Physicians and Surgeons has announced a series of part time courses in clinical medicine at the Mount Sinai Hospital, beginning September 25. A full time course in the recent advances in gynecology is planned for November 13-18. Additional information may be obtained from the Secretary for Medical Instruction, the Mount Sinai Hospital, Fifth Avenue at 100th Street, New York City 29.

Richard Freyberg Joins Hospital for Special Surgery. —Dr. Richard H. Freyberg, assistant professor of internal medicine and in charge of Rackham Arthritis Research at the University of Michigan School of Medicine, Ann Arbor, has been appointed chief of the department of medicine and pediatrics at the Hospital for Special Surgery, effective September 1. Dr. Freyberg will succeed Dr. Carlisle S. Boyd, who has been appointed to the board of consultants of the hospital. The Hospital for Special Surgery is maintained by the New York Society for the Relief of the Ruptured and Crippled.

Isolation Period Changed for Meningococcic Meningitis and Poliomyelitis. — The New York City Board of Health on July 11 amended section 89 of the sanitary code relating to isolation of persons affected with meningococcic meningitis and poliomyelitis. The isolation period for both these diseases was formerly fourteen days. In the future it will be limited until the temperature has reached normal. In an announcement, the board stated that the treatment of meningococcic meningitis with the sulfonamide drugs and penicillin has definitely shortened the time of recovery. In the case of poliomyelitis public health authorities now consider that the length of the isolation period may be safely limited to the period when the temperature is above normal. The board also deleted the requirements for the exclusion of contacts to these diseases from school or work.

NORTH DAKOTA

Dr. Wicks Ends Twenty-Five Years in Academy of Ophthalmology. — Dr. Frederick L. Wicks, Valley City, founder and first secretary of the North Dakota Academy of Ophthalmology and Otolaryngology, has resigned as secretary after serving twenty-five years in the position.

State Medical Election. — Dr. James F. Hanna, Fargo, was chosen president-elect of the North Dakota State Medical Association at its recent annual meeting and Dr. Frederick L. Wicks, Valley City, was installed as president. Dr. Leonard W. Larson, Bismarck, is the secretary. The next annual session will be held at Minot.

New Public Health Officers.—Francis C. Lawler, Sc.D., professor of bacteriology and immunology, University of North Dakota School of Medicine, Grand Forks, was chosen president of the North Dakota Public Health Association at a recent meeting in Fargo. Other officers include Anthony L. Bavone, Minot, vice president, Robert O. Baird, Bismarck, treasurer, and Mrs. Laura K. McCrory, Bismarck, secretary.

Dr. George Campana Appointed State Health Officer. —Dr. George F. Campana has been appointed health officer of North Dakota, effective July 1. He succeeds Dr. Frank J. Hill, who resigned to become city health officer of Minneapolis. Dr. Campana has served as director of the division of preventable diseases of the North Dakota State Department of Public Health since June 1943, when he came from New Rochelle, N. Y., where he had been acting city health officer. Dr. Campana graduated at the New York Medical College Flower and Fifth Avenue Hospitals in 1925. He served as assistant district state health officer with the New York State Department of Health in 1941-1942.

OHIO

New Venereal Disease Control Officer.—Dr. Ralph J. Doran, U. S. Public Health Service, has been assigned to the Dayton division of health as venereal disease control officer. The Dayton quarantine hospital was recently designated by the state health commissioner, Dr. Roll H. Markwith, Columbus, as a center to provide intensive therapy hospitalization for patients with communicable venereal disease.

Dr. Follansbee Honored. — Dr. George E. Follansbee, Cleveland, for many years chairman of the Judicial Council of the American Medical Association, has been awarded the distinguished service award of the Academy of Medicine of Cleveland. The citation accompanying the award enumerated the many years of service of Dr. Follansbee to the academy and acknowledged that he had done as much as any living physician to bring the academy of medicine to its present position of importance and influence.

Personal.—Dr. Leon Goldman, assistant professor of dermatology, University of Cincinnati College of Medicine, has been granted a fellowship by the Association of American Medical Colleges to study during July and August in Costa Rica, Guatemala and Mexico.——Dr. William E. Maine is now commissioner of health of Youngstown. —— Dr. Ralph W. Holmes, Chillicothe, has been appointed a member of the silicosis board of referees by the state industrial commission, succeeding the late Dr. William M. Doughty, Cincinnati. Other members of the board are Drs. Raymond C. McKay, Cleveland, and Joseph A. Muenzer, Toledo.

RHODE ISLAND

Hospital News.—Butler Hospital, Providence, the oldest in the state, on May 10 celebrated its 100th anniversary. Among the speakers on the program were Drs. Edward A. Strecker, Philadelphia, on "The Contribution of Psychiatry to Demo-

cratic Morale"; Gregory Zilboorg, New York, "Psychiatric Problems in the Wake of the War"; Karl A. Menninger, Topeka, Kan., "The War Against Fear and Hate," and Alan Gregg, New York, "The Place of the Endowed Hospital in the Future."——The estate of Frederick S. Peck, former state finance commissioner, and his wife was recently donated to the Homeopathic Hospital, Providence, for use as a convalescent home or children's hospital. Mr. Peck was president of the hospital board of trustees for sixteen years.

TEXAS

Narcotic Violations.—Dr. John Lawrence Kirby, Muleshoe, pleaded guilty in the U. S. District Court at Lubbock, June 5, to a violation of the federal narcotic law and was sentenced to a term of eighteen months in the U. S. Public Health Service Hospital at Lexington, Ky. Dr. Irby W. Fires, Seagraves, following a similar plea, was placed on probation for a period of one day. This information was received from the U. S. Bureau of Narcotics.

Appointments to Southwestern Medical College.—New appointments to the faculty of the Southwestern Medical College of the Southwestern Medical Foundation, Dallas, include those of Dr. William F. Guerriero, recently of the Louisiana State University School of Medicine, New Orleans, to associate professor of obstetrics and gynecology, and Miss Ann Rucker as registrar of the medical college.

Changes in Health Officers.—Dr. Ernest W. Prothro has been named as the acting officer of the Laredo-Webb County Health Unit, Austin, succeeding Dr. Arthur E. Ballard, who resigned to take a similar position at Belton.——Dr. Will M. Miller has been named director of the Corsicana-Navarro County Health Department, succeeding Dr. Finnis E. Sadler, resigned.——David F. Bradley, A. Surg., U. S. Public Health Service Reserve, has been placed in charge of the Wichita County Health Unit.

Personal.—Dr. Paul Brindley, professor of pathology, University of Texas School of Medicine, Galveston, recently returned from a hospital tour in Costa Rica, Guatemala, Honduras and Mexico City, where he had been making special studies in tropical medicine under the auspices of the John and Mary R. Markle Foundation.——Dr. Paul M. Rattan, Dallas, has been elected medical director of the Great National Life Insurance Company to succeed the late Dr. Dan R. Murchison, Dallas.——Dr. and Mrs. Marvin C. Overton Sr., Lubbock, recently contributed $20,000 toward the construction of a Methodist Student Center in Lubbock, it is reported.

UTAH

State Medical Meeting in Salt Lake.—The Utah State Medical Association will hold its annual meeting in Salt Lake City, August 25-26, under the presidency of Dr. James P. Kirby, Salt Lake City. Among the speakers on the program will be:

Dr. Vincent L. Rees, Salt Lake City, Postoperative Pulmonary Complications.
Dr. Alfred C. Callister, Salt Lake City, Use of Tube Grafts in Deep Contracture Scars Resulting from Burns.
Dr. Maxwell M. Wintrobe, Salt Lake City, Current Views on the Diagnosis and Treatment of Nutritional Deficiency.
Dr. Clarence O. Sappington, Chicago, Meaning of Industrial Medicine, Hygiene and Health; Medicolegal Aspects of Industrial Practice.
Dr. Leroy U. Gardner, Saranac Lake, N. Y., Silicosis; Tuberculosis in Industry.
Dr. Edward William Alton Ochsner, New Orleans, Neurovascular Lesions.
Brig. Gen. John M. Willis, M. C., Medical Administration and Hospitalization in a Service Command.
Col. William J. Kennard, M. C., Experiences in the AAF Convalescent Program.
Lieut. Col. Ambrose H. Storck, M. C., Abdominal Wounds—Management and Results in the Present War.
Major John H. Clark, M. C., Medical Service on Gaudalcanal.
Capt. LeRoy J. Kleinsasser, M. C., Surgical Treatment of Peripheral Vascular Disease.
Capt. Floyd J. Putney, M. C., Treatment of Lateral Sinus Thrombosis with Utilization of Penicillin.
Capt. Radford C. Tanzer, M. C., Plastic Surgery of War Injuries.
Lieut. Col. Leander W. Riba, M. C., Treatment of Certain Types of Urinary Obstruction.
Major Max T. C. Schnitker, M. C., Osteomyelitis of the Skull—Its Treatment with Penicillin and Repair of Defects with Tantalum Plate.
Major Clyde S. Roof, M. C., Indications for the Use of Various Intravenous Solutions.
Major Hazen B. Daines, M. C., Otitis Media.
Lieut. Col. Lauren H. Smith, M. C., Treatment in War Psychiatry.
Lieut. Col. John J. Loutzenheiser, M. C., Program of Occupational Rehabilitation in Relation to Medicine.
Major James R. Patrick, A. G. D., Use of Abilities and Skills in Morale and Rehabilitation.

WEST VIRGINIA

Hospitals Waive Fees for Tornado Victims.—The two Clarksburg hospitals, St. Mary's and Union Protestant, have waived all fees for rooms and services in connection with the treatment of victims of the tornado which devastated part of the city of Shinnston, June 23, taking a toll of seventy lives and sending more than 200 persons to the hospitals for treatment. Previously, on July 7, the Harrison County Medical Society voted unanimously to waive all fees for medical service (THE JOURNAL, July 22, p. 861). The decision of the authorities of the two hospitals means not only that there will be no charge for rooms but that fees for all usual services, including x-ray and laboratory, will also be waived.

Changes in Venereal Disease Bureau.—Dr. John C. Hume, U. S. Public Health Service, who has been serving as venereal disease control officer at Wilmington, N. C., has been detailed as acting director of the bureau of venereal diseases of the West Virginia Department of Health to succeed Dr. Leon A. S. Saler, U. S. Public Health Service, who has been transferred to Baltimore. Dr. Saler has been acting director of the bureau for the past three years. Dr. Wilfred H. Zwahlen, Logan, venereal disease control officer for the southwestern West Virginia District, has been transferred to the Kanawha Valley Medical Center at Charleston, replacing Dr. Lawrence M. Zell, who has been assigned to Wilmington, Del.

WYOMING

State Medical Election.—Dr. William Andrew Bunten, Cheyenne, was chosen president-elect of the Wyoming State Medical Society at its recent annual meeting and Dr. Thomas J. Riach, Casper, was installed as president. Dr. Marshall C. Keith, Cheyenne, is the secretary. The next annual session will be held at Casper.

GENERAL

Board of Technologists Announces Examinations.—The board of registry of the American Society of Clinical Pathologists announces that the fall examination for registration will be given on October 27. Applications must be submitted by September 1. Blanks may be obtained from Mrs. Ruth Drummond, Registry of Medical Technologists, Ball Memorial Hospital, Muncie, Ind.

Changes in Rockefeller Foundation.—Dr. Hugh H. Smith, a staff member of the International Health Division of the Rockefeller Foundation since 1930, has been appointed regional director of the United States, Canada and Mexico. Dr. Smith succeeds Dr. John A. Ferrell, who recently became medical director of the John and Mary R. Markle Foundation (THE JOURNAL, July 8, p. 730). Dr. Smith on September 1 will also become assistant director of the International Health Division. Dr. George K. Strode, who has been acting director of the International Health Division since June 1, will become director on September 1. At the same time Dr. Andrew J. Warren, assistant director in the division, will become associate director.

National Vitamin Foundation.—The organization of a National Vitamin Foundation was approved at a meeting of fifty representatives of all sections of the vitamin industry in New York, May 23. Its objectives would be to award grants for research in the vitamins or related fields, the dissemination of information to the vitamin trade, medical profession and public with respect to the quality, purpose and uses of vitamins, adoption of terminology and standards of publicity practices in connection with the sale of vitamins, and to confer and consult with medical societies, medical schools, health organizations, public health agencies and governmental agencies with respect to vitamins and the vitamin industry. The foundation would be administered by a board of trustees. Details of the organization are to be formulated by a committee of which Basil O'Connor, New York, president of the National Foundation for Infantile Paralysis, has been named chairman.

Special Society Elections.—Dr. Alfred I. Folsom, Dallas, was chosen president-elect of the American Urological Association at its meeting, June 22, and Dr. Clyde L. Deming, New Haven, Conn., was installed as president. Dr. Thomas D. Moore, Memphis, Tenn., is secretary and Dr. Herbert H. Howard, Boston, treasurer.——At the meeting of the medical section of the American Life Convention on June 23 in Chicago Dr. John M. Livingston, medical director of the Mutual Life Assurance Company of Canada, Waterloo, Ont., was elected chairman, succeeding Dr. Thomas H. Dickson, medical director of the Minnesota Mutual Life Insurance Company,

St. Paul. Dr. Benjamin F. Byrd, Nashville, medical director, National Life and Accident Insurance Company, was elected secretary.——Dr. Max Thorek, Chicago, was named president of the American Physicians' Art Association and Drs. George Harvey Agnew, Toronto, and William Rowland Davies, Scranton, Pa., vice presidents. Dr. Francis H. Redewill, San Francisco, was reelected secretary-treasurer.

Kellogg Foundation Creates Advisory Committees.—The W. K. Kellogg Foundation, Battle Creek, Mich., has recently appointed advisory committees in a number of fields that comprise its major interests to evaluate the present programs and activities, review the major financial requests presented to the foundation and develop worth while activities in their respective fields that are consistent with the policies and philosophy of the foundation. Committees have been named in the fields of public health, hospitals, nursing, education and libraries. Plans are being made to name one in medicine and one in public health engineering. Among the advisory committees already named are the following:

Public Health Advisory Committee
Dr. Wilson G. Smillie, New York.
Dr. Gregoire F. Amyot, Victoria, B. C., Canada.
Dr. Henry F. Helmholz, Rochester, Minn.
Dr. Hugh R. Leavell, Louisville, Ky.

Hospital Advisory Committee
Mr. James A. Hamilton, New Haven, Conn.
Dr. Robin C. Buerki, Philadelphia.
Lieut. Col. Basil C. MacLean, M. C.
Mr. John R. Mannix, Chicago.

Nursing Advisory Committee
Mrs. Leath Blaisdell Bryan, New York.
Miss Minnie E. Pohe, Washington.
Miss Ruth B. Freeman, Minneapolis.
Miss Lucile Petry, Washington.

The committees will meet two to four times a year in Battle Creek and will be available to the officers of the foundation on a consultation basis throughout the year.

Changes in Obstetric Board Requirements.—At the annual meeting of the American Board of Obstetrics and Gynecology in Pittsburgh June 7-13, approval was given to the waiver temporarily of the requirement of membership in the American Medical Association for men in the Army or Navy, especially for those who proceeded directly or almost so from hospital services into the army or navy service, with the condition that a statement is given of intention to join promptly when returned to civilian practice. The board also accepted a period of nine months as an academic year in satisfying its requirements for certain years of training. This is only for the duration, and even men who are not eligible for military service but who are nevertheless in hospitals where the accelerated program is in effect have been allowed to submit to the board this short-time period of training in lieu of our previous requirements. Beginning with the next written examination, which is scheduled to be held the first Saturday afternoon in February 1945, the board will limit the written examination to a maximum period of three hours, and in submitting case records at this time all candidates' case abstracts whose obstetric reports do not include measurements either by calipers and, as indicated, by acceptable x-ray pelvimetry will be considered incomplete. Prospective applicants or candidates in military service are urged to obtain from the office of the secretary a copy of the "Record of Professional Assignments for Prospective Applicants for Certification by Specialty Boards," which will be supplied on request. This record was compiled by the Advisory Board for Medical Specialties and is approved by the Offices of the Surgeons General, having been recommended to the services in circular letter number 76 from the War Department Army Service Forces and referred to as the Medical Officer's Service Record. These will enable prospective applicants and candidates to keep an accurate record of work done while in military service and should be submitted with the candidate's application, so that the credentials committee may have this information available in reviewing the application. Applications and bulletins of detailed information regarding the board requirements will be sent on request to Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh 6, Pa. Applications must be in the office of the secretary by November 15, ninety days in advance of the examination date. The time and place of the spring 1945 (part II) examinations will be announced later.

CORRECTION

Studies in Prothrombin.—In the article by Shapiro with this title in THE JOURNAL June 24, in the first paragraph under "Results" on page 547 the dosage of acetylsalicylic acid should have been 6 Gm. instead of 6 mg., as given.

Government Services

Lanham Funds for Child Care

A total of $221,403 Lanham Act funds has been allocated by the Federal Works Agency to seventeen "war impacted" localities in twelve states to carry on child care, recreation and school services. The projects are located in California, Colorado, Georgia, Kentucky, Michigan, Montana, New Hampshire, New Jersey, New York, Ohio, Oregon and Washington.

Marian Russell Named Medical Social Consultant

Marian E. Russell, executive secretary of the American Association of Medical Social Workers, has been appointed medical social consultant in the office of vocational rehabilitation, Federal Security Agency. Miss Russell will aid in the formulation and development of the medical social aspects of the vocational rehabilitation program, especially as they relate to the physical restoration of disabled persons. She will provide consultant and technical services for the federal office and for the state divisions of vocational rehabilitation and the state agencies for the blind.

Dr. Daily Leaves Health Service Division

Dr. Edwin F. Daily, director of the division of health services of the Children's Bureau, U. S. Department of Labor, has been granted leave to serve with the Army of the United States to assist in reestablishing civilian medical and hospital services in some of the liberated countries. Dr. Abram L. Van Horn has been appointed director of the division of health services and Dr. Betty Huse has been named to succeed Dr. Van Horn as assistant director for crippled children in the division. Dr. Daily has been in charge of the emergency maternity and infant care program administered by the Children's Bureau, under which medical, nursing and hospital care are given servicemen's wives and infants. Dr. Van Horn graduated at the University of Michigan Medical School, Ann Arbor, in 1928 and before joining the Children's Bureau in 1936 served as chief of the bureau of child hygiene of the Ohio Department of Health. Dr. Huse has been associated with the division of health services since 1939.

Additional Fellowships for Health Education Available

The U. S. Public Health Service announces that, through the cooperation of the National Foundation for Infantile Paralysis and the W. K. Kellogg Foundation, additional fellowships for health education are now available for qualified men of certain Selective Service classifications as well as for women. Funds for the fellowships have been made available through the National Foundation for Infantile Paralysis, Inc., and the W. K. Kellogg Foundation for the collegiate fall term of 1944. The fellowships have been established to meet the present and future needs for trained health educators in schools, communities and local, state and federal health departments. Women between the ages of 19 and 40 inclusive who are United States citizens and men who are United States citizens, 30 years or over, or whose Selective Service classification is 4F or 1AL, and who possess a bachelor's degree from a recognized college or university may apply. Candidates should have a skilful knowledge of the use of the English language, courses in the physical and biologic sciences, social sciences, education and educational psychology plus the ability to work effectively with people. Fellowships will lead to a master of science degree in public health. They will provide for twelve months' training in public health education, three months of which will be supervised field experience; $100 a month for twelve months, full tuition and travel. Training will be given either at the University of North Carolina, Yale University or University of Michigan. Forms for application for fellowships may be obtained from the Surgeon General, U. S. Public Health Service, Washington 14, D. C. Applications must be accompanied by a transcript of college credits and a small photograph and must be in the office of the Surgeon General not later than August 15.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 24, 1944.

Penicillin in the Treatment of War Wounds

For the guidance of those who treat battle casualties, the Penicillin Clinical Trials Committee of the Medical Research Council has prepared a memorandum. It points out that penicillin has three properties which make it an ideal antiseptic: it inhibits the growth of bacteria in extremely high dilutions, it has almost no toxicity and its action is unimpaired by serum, blood or pus. No other substance has these qualities in anything like the same degree, and clinical trials are fully in accord with the expectations aroused. Applied locally, it is immensely superior to the sulfonamides as an antiseptic for three reasons: it is a much more potent bacteriostatic, it acts efficiently on large as well as small quantities of bacteria and its action is not inhibited by pus. It also is used systemically. A solution is injected intravenously or intramuscularly, with the object of maintaining a bacteriostatic concentration in the blood. This treatment may be necessary for extensive and deep seated infections and for septicemia, but under present conditions it should not be used if the responsible organism is susceptible to sulfonamide treatment.

The action of penicillin on bacteria is highly selective. Gram positive cocci (Staphylococcus aureus, Streptococcus pyogenes, other streptococci except enterococcus, and pneumococcus), Clostridia, Neisseria, Bacillus anthracis and Corynebacterium diphtheriae are susceptible. Proteus vulgaris, Pseudomonas aeruginosa, the coli-typhoid-dysentery group, Pasteurella, Brucella, Haemophilus, Enterococcus and the tubercle bacillus are insusceptible. From the point of view of wound treatment the principal pyogenic cocci and the whole of the gas gangrene group are highly susceptible, while all gram negative bacteria, except gonococci and meningococci, are resistant. The only common pathogens among the gram negative are Proteus, Pseudomonas aeruginosa and coliform bacilli.

The local application of penicillin through a tube inserted into the wound is the best and least wasteful method. In most cases the solution should be injected at twelve hour intervals. Open wounds may be sprayed, although the use of a powder or cream is generally preferred. Penicillin in a strength of 1,000 to 5,000 units per cubic centimeter has been injected into abscess cavities following aspiration of pus. Penicillin cream may be used for surface wounds which cannot be closed or for skin infections. Penicillin powder may also be used for wounds which cannot be closed, or it may be applied preparatory to closure.

Malnutrition and Disease in India

The physiologist A. V. Hill, F.R.S., has returned from a mission to India. In a letter to the *Times* he deals with nutrition and disease in that country. He says that there has been much fruitless recrimination about the recent famine in Bengal and that instead of arguing about the symptoms we should face the facts. The mortality in India at all ages is four to eight times ours; the expectation of life at birth is 26 years against our 62; one half those born reach 22 years against 69 per cent with us. Ill health is correspondingly prevalent; between 100 and 200 millions out of nearly 400 suffer from malaria every year. Tuberculosis, cholera, smallpox, plague, guinea worm and filarial infection, yaws, kala-azar and many other diseases take their toll of life and health. A large part of the population—according to any reasonable standard more than half—is underfed. Of these many millions live on the verge of starvation. Chronic malnutrition acts with disease in a vicious circle. In spite of all this the population of India increases by 6 million annually, or at the rate of about 16 per thousand. There is nothing new in this malnutrition and disease in India. Indeed, the present population trend indicates that the effect is less than it has been in the past. The population has increased from 280 millions in 1900 to 389 millions at the last computation. This increase has been steady except for a drop in 1918-1919 due to an epidemic of influenza—a striking example of the effect of disease on a chronically underfed population.

Already about 50 per cent more food is required in India, Professor Hill states. He asks "Can agriculture by present methods catch up and cope with the expanding population?" He thinks it is idle to talk of family limitation except as a long term policy, and the present need is acute. The factor of safety in India is very low. Disorganization or disorder would lead to a frightful tragedy. Cooperation of all men of good will in the wholehearted development of India's resources by modern, scientific methods is the only hope of averting disaster, Professor Hill believes. It might be added that India is a striking example of the truth of the doctrine of Malthus, which it is the fashion in some quarters to scoff at just now. Malthus taught that population always tends to outgrow the means of subsistence and if not checked by prudent means must be checked by the positive means of famine and disease. British rule has provided a safety of life unknown previously in India and has introduced modern methods of industry in some places. The result has been a great increase of population, but for this very reason the malnutrition of the vast millions could not be mitigated.

Speed in Treatment of the Wounded

On June 6, the opening day of the landing of allied troops in France, some casualties were already back in Britain. The speed with which the wounded are succored has often been noted as a noteworthy feature of this war. For example, it is claimed that in North Africa the lives of at least 5,000 wounded were saved by one thing only—speed. There was speed in picking them up when they were hit, speed in getting them to a first aid station, speed in getting them to the hospital and speed in getting them to a base. A few hundred yards behind the line is the regimental aid post. Here are medical officers and trained orderlies. If blood transfusion is necessary, it can be done here. Even an operation can be performed if necessary. Usually, however, the wounded man is given an injection of morphine and within thirty minutes is 2 miles back at a field dressing station. This is usually a sandbagged, canvas shelter, but it may be set up in a commandeered building. Its equipment is carried on a 3 ton lorry. There are two medical officers and five assistants. Antitetanus injections, blood transfusion or saline and dextrose injections are done here, and even after major operations can be performed. In close radio contact is the field ambulance with at least half a dozen beds. The wounded man does not stop here long but is taken to the casualty clearing station about 20 miles behind the line, which he reaches in not more than two hours from the time he is hit. Here the diagnosis is finally established and he is scheduled for resuscitation, operation or further evacuation. From the casualty clearing station he goes to the general hospital, established at a railhead either in a commandeered building or in a marquee. Here all the resources of medical science, including x-rays, are available. In case of urgency he may travel to the general hospital by air. However he travels, he is nursed on the way, usually by women.

The Treatment of Gas Gangrene

As fighting extends in Europe, gas gangrene becomes a more likely complication of wounds. The Army Medical Department has therefore issued to every medical and dental officer a bulletin laying down the treatment to be followed in the light of the important experience gained in the present

war. Gas gangrene may follow trivial injuries but is most likely in cases of interference with the main blood supply of a limb, extensive laceration of muscle, particularly of the thigh, buttock or shoulder, compound fracture of the long bones, especially of the lower limb, foreign bodies carried deeply, prolonged application of a tourniquet or tight packing, application of a tight plaster or even a tight dressing to an inadequately excised wound and delay in surgical treatment. In all such cases the following prophylaxis is laid down: Polyvalent gas antitoxin 22,500 units, with the usual dose of tetanus antitoxin, should be injected intramuscularly in forward medical units, but when intravenous administration is practicable it is preferable. The usual sulfonamide medication should be followed both locally and by mouth. But wound excision is the most important prophylactic and should never be unnecessarily delayed.

If gas gangrene is established, speed is essential to save life. Preoperative measures consist of (1) a dose of 60,000 units of polyvalent gas gangrene antitoxin given intravenously by syringe (if the toxemia is very severe 100,000 units should be given); (2) sulfathiazole 3 Gm., which may be given during transfusion, and (3) transfusion of 1 or 2 pints of blood. Occasionally blood may be contraindicated; in such cases, or if blood is not available, plasma may be given. As a general rule if the patient is too ill for operation he is unlikely ever to be in a better condition than following administration of 100,000 units of antitoxin in 1 or 2 pints of blood.

Removal of the infection by complete excision of the affected tissues is essential. Amputation is by no means a routine necessity, though frequently it is inevitable because of vascular damage. Where only one muscle or one group of muscles is involved, that muscle or group should be extirpated from origin to insertion. Great care must be taken not to damage the blood supply to adjacent muscles. If radical surgery is impossible, either because of the site of infection or because of the condition of the patient, the muscle sheaths and muscles must be freely incised to relieve tension, and intensive therapy with antitoxin and drugs pursued. The best anesthetic is a small dose of pentothal sodium followed by nitrous oxide and oxygen. Chloroform and ether must be avoided. From necessarily limited experience, it seems that penicillin will prove of great value in the treatment of gas gangrene. The initial dose should be at least 30,000 units of sodium penicillin intramuscularly. Three hours later it should be given at the rate of 5,000 to 6,000 units by intravenous drip.

Nutrition Research Unit for the British Colonies

With the object of improving the health of the British colonial peoples a research organization has been formed in London. It is called the Human Nutrition Research Unit, and it has been established by the Medical Research Council with Dr. B. S. Platt as director. The unit is already engaged in important investigations affecting colonial nutrition and is offering hospitality for study and research to nutrition workers from the colonies. It will soon be ready to advise colonial governments on technical questions. The formation of the unit is regarded as only the first step toward a wider organization, which, it is hoped, will include in its scope both teaching and research and will cooperate closely with workers in the colonial dependencies.

Penicillin Workers Honored by the Government

Alexander Fleming, F.R.S., professor of bacteriology at the University of London, discoverer of penicillin, and H. W. Florey, professor of pathology at Oxford University, developer of the use of penicillin in medicine, have been knighted for their services to medical science.

BOLIVIA

(From Our Regular Correspondent)

May 6, 1944.

United States Cooperation with Bolivian Health Service

Under the direction of Dr. George Bergman of Los Angeles the Servicio Cooperativo Interamericano de Salud Publica, organized by the coordinator for inter-American affairs, is cooperating directly with the Bolivian health minister to carry on a vast public health program throughout Bolivia. In 1942 and 1943, $1,000,000 was made available to support the Bolivian health program; this amount is 60 per cent of the whole Bolivian health budget for a year. The service bought a large building in the center of La Paz to establish besides its own offices a public health center, a training center for nurses, a large conference room and offices for the Ministry of Health. Already an important health center is being conducted in the overcrowded suburb Villa Victoria, where sanitary work is of utmost importance because of a lack of sewerage facilities, unhygienic dwellings and lack of doctors. The nurses there gave excellent service during the last typhoid epidemic by large scale vaccination. Assistance with a training school for nurses is being given in La Paz. In Bolivia's second largest town, Cochabamba, a health center is operating and a large central laboratory is nearing completion. In the tropical Beni district the service is operating a provisional 10 bed hospital. In Guayaramerin, on the Brazilian border, a temporary 12 bed hospital is being operated at the present time. In both Riberalta and Guayaramerin modern hospitals of 30 and 20 beds respectively are in process of construction. The service owns four river boats in the Amazonas district, providing medical attention to these important rubber producing regions. In the same district it cooperates also with the U. S. owned Rubber Development Company in providing doctors and sanitary engineers for this essential production. Also it controls the medical services and hospitals in several mines in the Cordillera region.

Direct cooperation with local physicians is effected by offering vaccines and drugs that are hard to get and also educational films on tuberculosis, venereal diseases, cancer and other public health problems.

The servicio has been operating only a year and a half and plans to build other health centers, one in a suburb of La Paz and others in the district capitals Oruro and Potosi. It also plans to assist in a nurse's training school in Cochabamba.

The personnel of the service is composed of Bolivian as well as some foreign and especially American practitioners and employees.

Of utmost importance is the servicio's large scale sanitation program in the vast malaria infested regions and a more effective control of communicable diseases such as typhus, typhoid, relapsing fever, whooping cough, variolosis and leprosy.

A number of scholarships have been offered and granted to various doctors and other persons by the Health and Sanitation Division of the Coordinator's Office in Washington, D. C., and some of these have already entered their specialized training. The Bolivian minister for health and labor has left for a Washington, D. C., health conference to increase cooperation.

Marriages

CHARLES RICHARD BATES JR., Shreveport, La., to DR. HARRIET ANN HEGAR of Edinburg, Texas, in El Paso, May 19.

GEORGE CONWELL SMITH JR., Kaufman, Texas, to Miss Frances Grisham in Memphis, Tenn., June 14.

WILLIAM M. LA ZEBNIK, Jackson, Mich., to Miss Mayda Chosed of Merrick, L. I., N. Y., in March.

Deaths

William E. Parke ✠ Miami Beach, Fla.; University of Pennsylvania Department of Medicine, Philadelphia, 1886; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the Medical Society of the State of Pennsylvania; past president of the Obstetrical Society of Philadelphia and of the Association of Ex-Residents and Resident Physicians of the Philadelphia General Hospital; fellow of the American College of Surgeons and the College of Physicians of Philadelphia; served on the staffs of the Hospital of the Protestant Episcopal Church, Frankford Hospital, Presbyterian Hospital, St. Mary's Hospital, Kensington Hospital for Women and the Northern Dispensary, Philadelphia, died June 26, aged 82.

Henry Barnard Hitz ✠ Milwaukee; Columbian University Medical Department, Washington, D. C., 1891; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; formerly professor of laryngology and rhinology at the Wisconsin College of Physicians and Surgeons; an adjutant at the Milwaukee Base Hospital number 22 near Bordeaux, France, during World War I; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; on the staffs of the Columbia and Milwaukee Children's hospitals; vice chief of staff, Milwaukee Hospital, where he died April 6, aged 76, of coronary occlusion and general arteriosclerosis.

Charles Bradley Pinkham, San Francisco; New York Homeopathic Medical College and Hospital, New York, 1899; member of the California Medical Association; retired Feb. 1, 1943 as secretary-treasurer of the California State Board of Medical Examiners, a position he had held since 1913; served as a member of the board; in 1930 president of the Federation of State Medical Boards of the United States; at one time professor of anatomy at the Hahnemann Medical College of the Pacific; formerly chief surgeon of the San Francisco emergency hospitals; died at his home in Atherton, Calif., July 14, aged 71.

John Reid Andrews, Bedford, Ind.; Kentucky School of Medicine, Louisville, 1892; for one term mayor; county clerk of Lawrence County for eight years; secretary of the chamber of commerce; a charter member, past president and secretary of the Kiwanis Club; died May 25, aged 72, of chronic myocarditis.

James Aloysius Barrett, New Bedford, Mass.; Maryland Medical College, Baltimore, 1910; member of the Massachusetts Medical Society and the New England Roentgen Ray Society; died in St. Luke's Hospital April 28, aged 58, of coronary thrombosis.

William Lee Bishop, Portland, Ore.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; member of the Oregon State Medical Society; formerly editor of the *Medical Sentinel;* died in the Hahnemann Hospital April 26, aged 71, of hypertensive cardiorenal disease and encephalopathy.

John Charles Bowman, Genoa, Ohio; Columbus Medical College, 1890; died May 30, aged 81, of coronary disease.

Ervin Davis Brooks, Kalamazoo, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1885; member of the Michigan State Medical Society; died in the Kalamazoo State Hospital April 14, aged 89.

Alexander Eugene Burke ✠ Philadelphia; Georgetown University School of Medicine, Washington, D. C., 1918; diplomate of the National Board of Medical Examiners; fellow of the American College of Surgeons; formerly member of the state board of medical education and licensure; served in the medical corps of the U. S. Navy during World War I; gynecologist, St. Joseph's Hospital from 1929 to 1935 and later surgeon; chief surgeon, Fitzgerald-Mercy Hospital, Darby, Pa., and St. Agnes Hospital; died May 19, aged 48.

Martin Loren Cantrell, Marked Tree, Ark.; University of Tennessee College of Medicine, Memphis, 1931; member of the Arkansas Medical Society; served as secretary of the Craighead-Poinsett Counties Medical Society; surgeon for the Frisco Railroad; died in the Baptist Memorial Hospital, Memphis, Tenn., April 19, aged 39, of nephritis and cardiovascular disease.

Archie F. Caraway, Gulfport, Miss.; Mississippi Medical College, Meridian, 1910; on the staff of the King's Daughters' Hospital; died May 17, aged 63, of postencephalitic complications.

Edgar Christy ✠ Glenwood, Iowa; University of Nebraska College of Medicine, Omaha, 1907; life member of the Iowa State Medical Society; past president of the Mills County Medical Society; a captain in the medical corps of the U. S. Army during World War I; a member of the medical reserve corps; on the staff of the Jennie Edmundson Memorial Hospital, Council Bluffs; since 1941 assistant superintendent of the Glenwood State School; died July 5, aged 63, of coronary occlusion.

Edwin Davis ✠ Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, Fort Worth, 1911; president of the Tarrant County Medical Society in 1923; one of the first members of the Children's Hospital staff and once a member of the staff of a number of hospitals in Fort Worth; for many years served as chief of staff of the department of gynecology at the City-County Hospital; a member of the Kiwanis Club; died April 6, aged 69, of pulmonary embolism due to suppurative pneumonitis.

John Clayton Davis, Little Rock, Ark.; Memphis (Tenn.) Hospital Medical College, 1903; member of the Arkansas Medical Society; assistant professor of neuropsychiatry at the University of Arkansas School of Medicine; served as president of the Poinsett County Board of Health; for many years on the staff and at one time superintendent of the State Hospital; died April 30, aged 71, of coronary disease.

Frank Adams Ewers, Akron, Ohio; Jefferson Medical College of Philadelphia, 1905; member of the Ohio State Medical Association; died March 9, aged 65.

Leon Feingold, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; died in the Grant Hospital April 12, aged 68.

Charles H. Fulbright, St. James, Mo.; Missouri Medical College, St. Louis, 1889; member of the Missouri State Medical Association; died April 18, aged 78, of chronic hypertension.

Sydney Ormond Goldan ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1896; died April 23, aged 74.

Donald Alexander Graham ✠ Denver; University of Nebraska College of Medicine, Omaha, 1923; examining physician for draft board number 9; on the staffs of the Presbyterian and St. Anthony's hospitals; died April 21, aged 48, of coronary occlusion.

Rudolph Melvin Gunderson, Lake Park, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1907; company physician for the local division of the Northern Pacific Railway; died April 2, aged 64, of heart disease.

Charles Reginald Hargrove, Marshall, Texas; University of Louisiana Medical Department, New Orleans, 1883; honorary member of the State Medical Association of Texas; past president of the Harrison County Medical Society and the Tri-State Medical Society; a member of the council of defense during World War I; served as city health officer and as local surgeon of the Gulf Coast and Santa Fe Railway; died March 26, aged 84, of heart disease.

Paul Douglas Hayman ✠ Huntington, W. Va.; Medical College of Virginia, Richmond, 1932; served an internship and later a residency at the White Cross Hospital, Columbus, Ohio; died May 1, aged 36, of glioma.

Albert E. Holley, St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1897; member of the Missouri State Medical Association; served as county physician and county health officer; on the staffs of St. Joseph's Hospital and the Missouri Methodist Hospital, where he died April 28, aged 79, of carcinoma of the pylorus and stomach.

Nathan Asbury Hughes, St. Louis; Hospital Medical College, Eclectic, Atlanta, 1910; died April 29, aged 66, of heart disease.

Herbert Shattuck Johnson, Stoneham, Mass.; Harvard Medical School, Boston, 1883; formerly practiced in Malden, where he was a trustee of the Malden Library, school physician and on the staff of the Malden Hospital; associated with the E. L. Patch Company, manufacturers of pharmaceutical supplies; died April 29, aged 87, of uremia.

John M. F. Keaney, Louisville, Ky.; University of Louisville Medical Department, 1895; member of the Kentucky State Medical Association; county coroner; died in St. Joseph Infirmary March 5, aged 68.

Charlie A. Kelley, Lilburn, Ga.; Atlanta College of Physicians and Surgeons, 1909; died in an Atlanta hospital March 18, aged 71, of subarachnoid hemorrhage.

Edward Brown Kinder, St. Louis; St. Louis College of Physicians and Surgeons, 1891; formerly professor of bacteriology, pathology and histology at his alma mater; found dead in bed May 29, aged 79, of coronary sclerosis.

Charles Albert Kittredge, Beacon, N. Y.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; died May 23, aged 72, of coronary thrombosis.

Frederick Herman Koepke, Watsonville, Calif.; Cooper Medical College, San Francisco, 1903; member of the California Medical Association; died May 18, aged 63, of heart disease.

William Steven Lacy, Jacksonville, Texas; Vanderbilt University School of Medicine, Nashville, 1883; past president of the Smith County Medical Society; died April 4, aged 85, of acute cardiac dilatation.

Oscar Bernhardt Lambert, Milwaukee; Northwestern University Medical School, Chicago, 1907; died in the Columbia Hospital May 31, aged 62, of carcinoma of the left lung.

Regina Ledbetter, Clarksville, Tenn.; University of Tennessee College of Medicine, Memphis, 1941; served an internship at the Women and Children's Hospital, Chicago; died May 12, aged 28, of rheumatic heart disease.

Arthur Lester, New York; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1921; resident physician at the Sunnyside Hospital, Staten Island, where he died May 8, aged 50, of heart disease.

Victor Fawcett Long, La Porte, Ind.; Rush Medical College, Chicago, 1914; died in Fairview Hospital, May 7, aged 54, of pulmonary embolism after amputation of the leg.

Thomas F. Loughlin ⊕ Hartford, Wis.; Marquette University School of Medicine, Milwaukee, 1915; served during World War I; died in St. Mary's Hospital, Milwaukee, March 17, aged 55, of coronary occlusion.

John Francis Lowney ⊕ Fall River, Mass.; Tufts College Medical School, Boston, 1900; elected president of the Fall River Medical Society in 1907; died February 19, aged 71, of chronic interstitial nephritis and coronary sclerosis.

Frederick Livingstone MacDonald ⊕ Waltham, Mass.; University of Vermont College of Medicine, Burlington, 1907; formerly instructor in otolaryngology at the Tufts College Medical School, Boston; for two terms mayor of Waltham; served on the staffs of the Boston City Hospital and Massachusetts General Hospital, Boston, and the Waltham Hospital; died May 24, aged 65, of carcinoma of the stomach.

John Allen McGee, Virginia, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1896; member of the Illinois State Medical Society; past president and secretary of the Cass County Medical Society; served as president of the local board of health; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; on the staffs of the Memorial and St. John's hospitals, Springfield, and the Passavant Memorial Hospital, Jacksonville; died May 6, aged 71, of coronary thrombosis.

Charles A. McNeil ⊕ Sedalia, Mo.; St. Louis University School of Medicine, 1905; formerly on the staff of the Missouri, Kansas and Texas Railroad Hospital; served as president of the Union Savings Bank; died May 17, aged 68, of coronary embolism.

Max Mahrer ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1917; served during World War I; died May 3, aged 50, of coronary thrombosis.

Emil Maisner, New York; Long Island College Hospital, Brooklyn, 1894; at one time member of the board of health of Union Hill, N. J.; at one time on the staff of the North Hudson Hospital, Weehawken, N. J.; died in the Fordham Hospital May 14, aged 77, of pneumonia and heart disease.

Olin May, Lubbock, Texas; Medical Department of Grant University, Chattanooga, Tenn., 1894; died March 12, aged 83, of cerebral hemorrhage.

William May, Farber, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; died in the Pike County Hospital, Louisiana, April 22, aged 93, of myocarditis.

John Bertrand Meury ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1896; formerly on the staffs of the Eastern District Trinity and Bushwick hospitals; died in the Eye and Ear Hospital May 13, aged 71, of uremia and heart disease.

Leo Clement Mundy ⊕ Wilkes-Barre, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; fellow of the American College of Surgeons; state senator; at one time Democratic county chairman and collector of internal revenue for the middle district of Pennsylvania; served overseas during World War I; received the Distinguished Service Cross for heroism in caring for wounded soldiers under heavy enemy fire; chief, surgical staff, Mercy Hospital, where he died June 11, aged 57, of coronary occlusion.

Hildus Augustinus O. Nass ⊕ Mabel, Minn.; State University of Iowa College of Medicine, Iowa City, 1898; died in the Lutheran Hospital, La Crosse, Wis., March 27, aged 72, of gastric carcinoma.

Clement Channing Nevin, Edgartown, Mass.; Yale University School of Medicine, New Haven, 1908; served as acting assistant surgeon in the U. S. Public Health Service; died March 12, aged 61, of acute hepatitis and chronic osteomyelitis of the tibia.

Isaac Otis Newell, Milwaukee; Rush Medical College, Chicago, 1892; died April 7, aged 75, of coronary occlusion.

Deno Francis O'Connor, Chicago; Loyola University School of Medicine, Chicago, 1917; member of the Illinois State Medical Society; formerly clinical assistant and clinical associate in otolaryngology at his alma mater; fellow of the American College of Surgeons; on the senior staff of the Mercy Hospital; served during World War I; died in the Madison General Hospital, Madison, Wis., April 18, aged 52, of cirrhosis of the liver.

John Jay Ogg, Marshall, Minn.; Barnes Medical College, St. Louis, 1903; died March 22, aged 86, of cardiovascular degeneration.

Daniel Joseph O'Loughlin ⊕ Kankakee, Ill.; Northwestern University Medical School, Chicago, 1904; on the staff of St. Mary's Hospital, where he died May 8, aged 63, of hypertensive heart disease and anterior wall infarction.

William Wallace Osgood, Muskogee, Okla.; Cleveland University of Medicine and Surgery, 1896; served as a member of the state board of medical examiners; died in Fort Smith, Ark., March 6, aged 74, of heart disease.

James Wight Packard ⊕ Rockton, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; formerly on the staff of the Wesley Memorial Hospital, Chicago; died in the Municipal Hospital, Beloit, Wis., May 24, aged 80, of cerebral arteriosclerosis.

Mary McDermott Penny, Saugus, Mass.; Tufts College Medical School, Boston, 1910; member of the Massachusetts Medical Society; formerly chairman of the public health commission; on the courtesy staff of the Lynn Hospital, Lynn; one of the Saugus school physicians; medical examiner for women at the Y. W. C. A.; died in Falmouth April 17, aged 73, of heart disease.

Edward Henry Peterson ⊕ Grand Junction, Colo.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1919; served as county physician; formerly member of the staff and secretary of St. Mary's Hospital; died April 13, aged 63, of coronary thrombosis and pneumonoconiosis.

Frank Sibbald Pike, Detroit; University of Louisville (Ky.) Medical Department, 1910; at one time secretary of the Toombs County (Ga.) Medical Society; for many years associated with Parke, Davis & Company; died in the Henry Ford Hospital May 2, aged 54, of cerebral hemorrhage.

James Kells Pollock, South Mountain, Pa.; Jefferson Medical College of Philadelphia, 1928; resident physician at the Pennsylvania State Tuberculosis Sanatorium number 1, where he died April 29, aged 42, of pulmonary tuberculosis.

Francis James Pomainville, Wisconsin Rapids, Wis.; Marquette University School of Medicine, Milwaukee, 1929; died March 21, aged 42, of injuries received in an automobile accident.

Marion Henderson Powers ⊕ Weirton, W. Va.; Jefferson Medical College of Philadelphia, 1907; served overseas with Base Hospital number 14 during World war I and was discharged with rank of captain; a member of the staffs of the Ohio Valley and Gill Memorial hospitals, Steubenville, Ohio; died at McCaza, Que., Canada, May 4, aged 62, of coronary thrombosis.

Hal Henslee Puckett, Alice, Texas; Memphis (Tenn.) Hospital Medical College, 1910; member of the State Medical Association of Texas and the Texas Public Health Association; past president of the West Virginia Public Health Association; formerly director of the Fayette County Health Unit in Fayetteville, W. Va.; director of the Jim Wells-Duval County Health Unit; served as director of the health units of Floyd, Tom Green and Bowie counties; died April 15, aged 59, of coronary occlusion.

Fletcher Stanhope Pyle, San Francisco; College of Physicians and Surgeons of San Francisco, 1905; on the staffs of St. Mary's Hospital and St. Joseph's Hospital, where he died April 10, aged 73, of generalized arteriosclerosis, hemiplegia and myocarditis.

John Harrison Quayle, Miami, Fla.; Cleveland University of Medicine and Surgery, 1895; University of Wooster Medical Department, Cleveland, 1904; a life member of the Cleveland Chamber of Commerce; died in St. Francis Hospital April 25, aged 69, of carcinoma of the head of the pancreas.

Charles E. Rariden, Bedford, Ind.; Kentucky School of Medicine, Louisville, 1880; member of the Indiana State Medican Association; died in Dalton, Ga., April 29, aged 87, of coronary thrombosis.

Carrie Turner Reid, Indianapolis; Indiana Medical College, School of Medicine of Purdue University Indianapolis, 1906; died in the Methodist Hospital May 11, aged 65, of intestinal obstruction.

Robert Noel Ritchie ✠ Rochester, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1918; associate professor of obstetrics and gynecology at the University of Rochester School of Medicine and Dentistry; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; at one time superintendent of the Montreal Maternity Hospital and on the staff of the Royal Victoria Hospital, Montreal; on the staff of the Strong Memorial Hospital, where he died May 8, aged 49, of heart disease.

Monte Valient Robinson, Chicago; St. Louis College of Physicians and Surgeons, 1918; veteran of the Spanish-American War; a first lieutenant in the medical corps, U. S. Army, in 1918 and a captain in the officers reserve corps, U. S. Army, in 1919; owner of a clinical laboratory; died May 11, aged 64, of carcinoma of the liver.

Ola Raymond Rooks ✠ Trenton, Mo.; University Medical College of Kansas City, Mo., 1909; past president of the Grundy-Daviess Counties Medical Society; president of the board of education; county health officer; formerly on the staff of the State Hospital number 3, Nevada; served as president of the Kiwanis Club; president of the staff of the Wright Memorial Hospital, where he died April 5, aged 57, of acute coronary thrombosis.

LIEUT. FRANK J. KOLUMBAR JR., M. C., A. U. S., 1914-1944

LIEUT. ARTHUR W. WILKINSON (MC), U.S.N.R., 1911-1943

Samuel Rothenberg, Newark, N. J.; Long Island College Hospital, Brooklyn, 1916; member of the Medical Society of New Jersey; fellow of the American College of Surgeons; died April 29, aged 51.

Forrest Grimm Schaeffer ✠ Allentown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; fellow of the American College of Surgeons; chief of the department of obstetrics, Allentown Hospital; died May 10, aged 61, of coronary occlusion.

George Henry Scott, Boston; Tufts College Medical School, Boston, 1909; died March 24, aged 65.

George C. Smith, Poseyville, Ind.; Jefferson Medical College of Philadelphia, 1891; member of the Indiana State Medical Association; died in the Welborn-Baptist Memorial Hospital, Evansville, May 2, aged 80, of pneumonia and angina pectoris.

Elmer Leslie Smythe ✠ Pasadena, Calif.; California Eclectic Medical College, Los Angeles, 1914; member of the Washington State Medical Association; formerly with the Civilian Conservation Corps in Sanger, Capitola and Yosemite National Park; served on the staff of the U. S. Veterans Hospital number 59 in Tacoma, Wash.; died in the Veterans Administration Facility, West Los Angeles, April 19, aged 61, of carcinoma of the right kidney and bronchopneumonia.

Clarence Richard Spradling, Hallam, Neb.; Eclectic Medical College, Cincinnati, 1916; member of the Nebraska State Medical Association; on the staff of St. Elizabeth Hospital, Lincoln; died April 22, aged 53, of carcinoma.

Farkas Wolfgang Steiner ✠ Akron, Ohio; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1912; a medical officer in the Hungarian army during World War I; on the staffs of St. Thomas, Peoples and City hospitals; president of the Zionist Organization of America; died May 5, aged 56, of carcinoma.

Marion Russell Thomas, Savannah, Ga.; University of Maryland School of Medicine, Baltimore, 1902; member of the Medical Association of Georgia; chief surgeon of the Southern Railway and local physician for the Metropolitan Life Insurance Company; president of the staff of Oglethorpe Sanatorium, where he died April 8, aged 66, of carcinoma.

Jacob Hawkins Tucker, Kansas City, Mo.; Kansas City College of Medicine and Surgery, 1923; died in the Kansas City General Hospital April 29, aged 76, of bronchopneumonia.

George T. Veal, Dallas, Texas; University of Louisville (Ky.) Medical Department, 1883; at one time mayor of Roswell, N. M., and member of the legislature; died in Fabens April 22, aged 83, of pulmonary hemorrhage and thrombosis.

Claude Ebenezer Ward, Hartland, Vt.; University of Louisville (Ky.) Medical Department, 1905; served during World War I; died in the Mary Hitchcock Hospital, Hanover, N. H., April 26, aged 67.

Edgar Kirby Ward, Oakland, Calif.; College of Physicians and Surgeons of San Francisco, 1902; Northwestern University Medical School, Chicago, 1908; member of the California Medical Association; on the staff of the East Oakland Hospital; died April 26, aged 72, of coronary disease.

Mary Rhoda Wetmore, Allegan, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1898; died in the Allegan Health Center April 13, aged 74.

KILLED IN ACTION

Frank James Kolumbar Jr., Berwyn, Ill.; Chicago Medical School, 1942; served an internship at the North Chicago Hospital, Chicago; commissioned a first lieutenant in the medical corps, Army of the United States, on Oct. 12, 1942; killed in action in the Marshall Islands February 21, aged 29.

Arthur William Wilkinson, Phoenix, Ariz.; Harvard Medical School, Boston, 1938; diplomate of the National Board of Medical Examiners; served an internship and residency at St. Luke's Hospital in Chicago; commissioned a lieutenant (jg), medical corps, U. S. Naval Reserve; began extended active duty on Sept. 22, 1941; later promoted to lieutenant; for meritorious service in the line of duty received the Order of the Purple Heart; aged 31; killed in action when the U. S. S. *Sims,* a destroyer on which he was serving, was lost in the Battle of the Coral Sea, May 7, 1942; previously reported missing in action; presumptive date of death by Navy Department is May 8, 1943.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission, in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 increased the Food and Drug Administration's control of the advertising claims and statements made on the label of a medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in circulars, newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

THE JOURNAL has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added rights. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable. In some cases the claims cited have been discontinued by the firms several months (or even longer) before the issuance of the order. Abstracts of some of the orders issued in 1943 follow in this form: name of product, name of distributor, date of issuance of complaint, date of issuance of Cease and Desist Order and terms of order.

Kola Astier.—Kola Astier Corporation and Gallia Laboratories, Inc., both of New York; complaint issued Jan. 31, 1942; order issued June 26, 1943. Order directed the respondents to discontinue the following advertising misrepresentations: That their product is of value in treating any disorder or condition resulting from exhausted nerves, other than that afforded by a mild, temporary stimulant; that it is a tonic and will restore lost energy; that it is a competent or effective treatment for poor digesion or insomnia; that it has any reliable effect on heart action or the circulatory system, or that its diuretic action is sufficient to activate the liver and kidneys. The Commission reported that the only active ingredient in Kola Astier is caffeine, and that its value is limited to that of a temporary stimulant, and only to the extent of the stimulating effect obtained from a cup of coffee.

Merlek.—Michael E., Myron E. and Kenneth L. Lee, trading as Lee-Sons and as Merlek, Alameda, Calif.; complaint issued Nov. 15, 1942; order issued Oct. 27, 1943. Order directed respondents to discontinue any advertisement which represented that 90 per cent or any substantial percentage of diseases or ailments are due to a deficiency of minerals in the body; that Merlek corrects mineral imbalance or is the natural source of minerals; that it constitutes a cure or remedy for, or offers any value in the treatment of, prostatitis, eczema, rickets, headache, Bright's disease, high and low blood pressure, stomach and heart trouble, indigestion, diabetes, bronchitis, arthritis, rheumatism, cancer, asthma, goiter, anemia, cataracts, and the many other diseases or ailments mentioned in their advertisements, or any other ailment or condition of the body. The Commission reported that Merlek had been found to be nothing but filtered sea water, to which was added at one time a quantity of potassium iodide.

Nash's C & L Malaria Chill Tonic and Laxative.—William G. Nash, Sr., William G. Nash, Jr., and Florence Nash Cox, trading as Nash Brothers Drug Company, Jonesboro, Ark.; complaint issued May 3, 1939; order issued May 12, 1943. Order directed respondents to discontinue the following misrepresentations and false advertising claims, among others, for this product, formerly known as "Nash's C & L Tonic": That it will cure malaria, biliousness, constipation, chills, fever and ague; that it is an effective tonic which will restore vigor and vitality; that it both prevents and cures colds, is a new discovery which is in no way habit forming, that it is endorsed by nurses, physicians, school teachers and health officials throughout the southern part of the United States, and that nine out of ten persons living in that region have malaria. The order recognized that the product, as now constituted, is an antimalarial preparation and laxative, but when taken according to directions on the label, is not an effective treatment for the cure of malaria or a cure or remedy for liver trouble, dyspepsia or the other ailments enumerated, and will not restore vigor or vitality or prevent or cure colds, nor is it endorsed by nurses, physicians or health officials throughout the south. A previous order from the Commission, issued August 6, 1939, had directed the same Nash persons to cease representing that Nash's C & L Tonic, also then known as Nash Chill and Liver Tonic, would cure malaria and some other results.

Nature Seed.—Beatrice Kornstein, trading as Nature Seed Company, New York; complaint issued March 12, 1943; order issued Sept. 29, 1943. Order directed promoter to discontinue the following advertising misrepresentations: That the product is a doctor's prescription for delayed, unnatural or suppressed menstruation; that it constitutes a competent treatment for such conditions; that it is composed of ingredients derived from nature and is harmless to use. Miss Kornstein further was ordered to discontinue any advertisement which failed to reveal that the use of Nature Seed might cause gastrointestinal disturbances and in cases of pregnancy might result in uterine infection and blood poisoning.

Todd's Capsules.—J. E. Todd, Inc., Kenmore, N. Y.; complaint issued August 16, 1941; order issued July 30, 1943. Order directed the respondent to discontinue any advertisement which represented that the product has any value in treating arthritis, neuritis, rheumatism or similar diseases or conditions. The order further directed respondent to cease representing that his preparation will alleviate the symptoms of pain associated with such diseases or conditions, or that it possesses any curative properties in treating these disorders. The Commission found that the value of the product, if used in adequate amounts, is limited to neutralizing the acids of the stomach contents and to acting as a mild laxative.

World's Tonic.—William J. Cooksey, also known as Ross Dyar, trading as World's Medicine Company and using postoffice boxes in Columbus, Ohio, and Indianapolis; complaint issued Oct. 19, 1942; order issued Oct. 30, 1943. Order directed respondent to cease representing that his product is a cure or remedy for anemia, swollen joints, kidney disorders, headaches, or the numerous other ailments and diseases enumerated in the advertising, or that it possesses any value other than that of a laxative and a bitter; and to discontinue any advertisement which did not reveal that the product should not be used when nausea or other symptoms of appendicitis are present; provided, however, that such advertisement need contain only the statement, "Caution: Use only as directed" when a warning to the same effect is included in the label directions. The Commission reported that World's Tonic was a mixture of cascara and other cathartics, with small amounts of gentian root, prickly ash bark, and other substances which, by reason of their bitter taste, tend to give it the properties of an appetizer or "bitter tonic," but that, aside from its action as a laxative and a bitter, it was without therapeutic value.

STIPULATIONS

Agreements Between Federal Trade Commission and Promoters of Various Products

Following are abstracts of stipulations in which promoters of "patent medicines," medical devices and cosmetics have agreed, following action by the Federal Trade Commission, to discontinue certain misrepresentations in their advertising. These stipulations differ from the "Cease and Desist Orders" of the Commission in that such orders definitely direct the discontinuance of misrepresentations. The abstracts that follow are presented primarily to illustrate the effects of the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act on the promotion of such products:

Bevill's Lotion and Bevill's Corn Remedy.—John H. Bevill, trading as I. L. Bevill Company, Birmingham, Ala., has represented that his lotion will cure, heal or relieve athlete's foot in two days, relieve all types of eczema and effectively treat skin diseases resulting from bacteria or parasites; also that his preparation for corns is an effective treatment for bunions or ingrowing nails or will rid one of corns in from 1 to 5 days. In June 1943 he entered into a stipulation with the Federal Trade Commission in which he agreed to discontinue these advertising misrepresentations.

Gly-Cas.—This is a laxative sold by one Medora Whinrey, trading as Gly-Cas Medicine Company, Muncie, Ind. In June 1943 she stipulated with the Federal Trade Commission that she would discontinue any advertisements which failed to reveal that the product should not be used when abdominal pains, nausea or other symptoms of appendicitis are present; provided, however, that it would be sufficient to state in the advertisement, "Caution: Use only as directed" if and when the directions for use on the label contain a warning statement to the same effect. Records show that in May 1941 the Gly-Cas Medicine Company was ordered by the Commission to discontinue certain advertising representations for Gly-Cas. Among these were that it was a cure or remedy for constipation, indigestion, bloating or sour stomach, pains of rheumatism or neuritis, kidney disorders and some other ailments, when such conditions are due to causes other than constipation.

Laxo.—This preparation is sold by Benjamin Zwanger of Brooklyn in connection with his "Laxo Method" of dieting. In July 1943 Zwanger stipulated with the Federal Trade Commission that he would discontinue any advertisements which failed to reveal that Laxo should not be used when abdominal pain, nausea, or other symptoms of appendicitis are present, and that its frequent or continued use may result in dependence on laxatives. The stipulation provided, however, that it would be sufficient for such advertisements to state "Caution: Use only as directed" if the label of the product bears a similar warning.

Correspondence

PROPHYLAXIS OF SPOTTED FEVER

To the Editor:—It is thought that several comments should be made relative to your editorial entitled "Prophylaxis of Spotted Fever," which appeared in THE JOURNAL, May 20. By just glancing over the editorial it would seem that the observations of Anigstein, Bader, Young and Neubauer might have a clinical application as suggested. If one keeps in mind several known facts concerning Rocky Mountain spotted fever and the immunologic principles involved, it becomes evident that its practical application will be difficult if not impossible.

1. In order for active immunity to develop following local infiltration with immune serum around the site of a tick attachment, that tick must not only be infected but actually have passed the rickettsias on to the patient. If these two prerequisites are not satisfied, certainly there will be no subsequent immunity. Since only one among several hundred ticks, at the most, is infected, and even it must feed for several hours before it is able to infect, the chances of satisfying the two requirements mentioned are small. We know these chances are remote, for with the millions of tick bites that undoubtedly occur in the United States each year approximately only 500 cases of Rocky Mountain spotted fever are reported.

2. If a subsequent immunity after the infiltrations with serum is assumed, it will in most instances lead to a false sense of security on the part of both physician and patient. Lacking knowledge of the immunity status of the patient, it then becomes necessary to infiltrate for each separate tick bite. This would be an undesirable procedure if the commercially available immune rabbit serum is used, owing to the probability of an induced hypersensitivity to rabbit protein from repeated infiltrations. It is felt that the specific immune serum should be reserved for the treatment of actual cases of the disease. If human convalescent serum was employed we would still be confronted by the troublesome questions of which tick in several hundred is of real danger, and are we going to infiltrate for every tick bite? There is also the possibility to be considered, if human convalescent serum is employed, of producing hepatitis in some of the persons treated similar to the experience following yellow fever vaccine containing human serum.

3. Finally, it might also be mentioned that a fair number of cases of spotted fever give only a history of tick contact such as removing the arthropods from animals rather than the history of a definite tick bite. These individuals could not have had a prophylactic local injection of serum, and a question arises as to the actual site of infection even when a definite tick bite is present.

There are several methods available for the prevention of Rocky Mountain spotted fever. The first of these is the nonspecific precautions that can be taken by any one. They consist of avoiding areas known to be heavily infested with ticks, wearing clothing tight at the wrists and ankles to deny ticks admittance to the body, and finally the prompt and efficient removal of ticks after exposure. It has been shown that an infected tick must feed for a few hours before it will transmit the disease; therefore, if they are removed promptly the chances of becoming infected are greatly reduced. However, even in areas known to be heavily infected the ratio of infected to noninfected ticks is very low. It has been estimated that this ratio in heavily infected areas is not more than 1:300.

The other available method of prevention of this disease is the acquiring of active immunity by vaccination with the specific antigen. Years ago Spencer and Parker showed that a vaccine against this disease could be made by the phenolization of infected tick tissues. Experience with this vaccine over a period of some fifteen years indicates that the case fatality is definitely reduced and perhaps the morbidity as well. Rocky Mountain spotted fever vaccine is prepared by the United States Public Health Service at its Rocky Mountain Laboratory at Hamilton, Mont., and is dispensed from there to the various state health departments.

More recently Cox has been able to prepare a vaccine from infected yolk sacs of fertile hen's eggs that will immunize laboratory animals. This improvement in method will increase amounts of vaccine available. The Cox type vaccine is now being produced by the Public Health Service as well as by several of the biologic firms and can be purchased through ordinary commercial channels.

Widespread vaccination against a disease as sporadic as Rocky Mountain spotted fever offers but little hope of its control. It would be unwise as a public health measure to recommend vaccinations for other than those unusually exposed to ticks in areas known to be infected. The nonspecific method of prophylaxis should be advised for the rest of the population.

CHARLES ARMSTRONG, M.D.
NORMAN H. TOPPING, M.D.
Bethesda, Md.
Chief, Division of Infectious Diseases, and Surgeon, respectively, U. S. P. H. S.

PHLEBOTOMUS (PAPPATACI OR SANDFLY) FEVER

To the Editor:—In the July 1 issue of THE JOURNAL the first article on "Phlebotomus (Pappataci or Sandfly) Fever," by Major Albert B. Sabin, Lieut. Col. Cornelius B. Philip and John R. Paul, M.D., immediately commanded my attention as I had had considerable experience with sandflies in China and had identified the phlebotomus in relation to sandfly fever in North China.

In the middle of the second paragraph of this article it is stated that "there are also reports which would suggest that this disease may occur in China as far north as Peiping and Tientsin and as far south as Hongkong. . . ." This question was answered in a paper which I presented at the biennial conference of the China Medical Missionary Association at Shanghai in February 1915 and published in the *China Medical Journal* in March 1915, under the title of "Sandflies (Phlebotomus) in China and Their Relation to Disease: Preliminary Considerations of the Identification and Distribution of Sandflies in China, with Special Reference to Phlebotomus Papatasii, Scopoli." The article was also reprinted in the *Tsing Hua Journal*, volume 1, No. 1, November 1915, pp. 12-19, and translated into Chinese.

At that time it was my privilege to be the physician to Tsing Hua College (United States Indemnity College) near Peking. For six years I had an opportunity to study sandfly fever among the students who came from all parts of China and also among the American and Chinese faculty. Specimens of the flies captured in and near Peking were sent to the Imperial Bureau of Entomology of the British Museum, where they were identified by Mr. Guy A. K. Marshall and later by Professor R. Newstead.

A considerable number of the flies were also sent to Frederick Knab, entomologist of the United States National Museum in Washington, who studied them carefully. Both of these men identified the phlebotomi as a new species, and Newstead gave the name of "chinensis" to this species. Specimens of my flies are still on file in the National Museum in Washington. However, in my paper in the *China Medical Journal* I have given photomicrographs of the species caught near Tsing Hua College, Peking, China.

While at Tsing Hua College I sent a questionnaire to a number of physicians and missionaries on the prevalence of sandflies (Phlebotomus) in China. Replies were received from a number of districts, and it was evident that sandflies and sandfly fever were prevalent in Peking, Tientsin, Tongshan and other places along the Tientsin-Shanhaikwan Railroad as well as around Kalgan. In other places in the south very few were reported.

I have much unpublished material relating to the measurements of my specimens and also clinical details on the number of cases of phlebotomus fever that I have had an opportunity to study. I am sorry that I have no extra copies of the reprint of my articles, but these may be found in the Surgeon General's Library in Washington and in the bound volumes of the *China Medical Journal* in the Allen Memorial Medical Library in Cleveland.

RICHARD A. BOLT, M.D., Cleveland.
Director, Cleveland Child Health Association.

FETAL AND NEONATAL MORTALITY COMPLICATED BY DIABETES

To the Editor:—In the article "Fetal and Neonatal Mortality in Pregnancy Complicated by Diabetes" by Miller, Kuder and Hurwitz (THE JOURNAL, January 29) the authors conclude that "an increased fetal and neonatal mortality can be observed from fifteen to twenty years before the clinical symptoms and signs of diabetes can be recognized."

This report prompted a review of the subject in 200 diabetic married women attending the metabolism clinic of the Mount Sinai Hospital. The patients were interviewed personally, whereas Miller and his co-authors used record room data.

In the article, a fatality analysis made in five year periods for the twenty years prior to the onset of diabetes revealed a rate of 23.8 per cent with 252 children born and 60 deaths. In our group there were 54 mothers who bore all their children in the twenty year period prior to the onset of diabetes; 141 children were born, 6 were stillborn and 6 died before ten days, constituting a fetal and neonatal mortality of 8.5 per cent compared with 23.8 per cent in their group. Our fetal and neonatal mortality of 8.5 per cent in the twenty year period preceding the onset of diabetes is closer to that obtained in the nondiabetic patients, 5.4 per cent of the Miller series. The figures for our entire group of patients, including births before the twenty year prediabetic period, are 5.7 per cent, with 598 births and but 21 stillbirths and 13 infant deaths within ten days after birth.

We do not find that the "fetal and neonatal mortality is extraordinarily high long before the mothers develop symptoms or signs of diabetes." In our experience the prediabetic period is associated with a fetal and neonatal mortality not significantly greater than in normal patients.

HENRY DOLGER, M.D.
JOSEPH HERZSTEIN, M.D.
New York.

VACATIONS AND THALASSOTHERAPY

To the Editor:—The special article in THE JOURNAL April 15 entitled "Thalassotherapy" has come to my attention. It may be that the scientific material presented in this article is valid and correct, but it should be pointed out that any effort to evaluate the value of a vacation in any place must include some consideration of who is having the vacation, with whom he is having it, why he needs it and what he does while he is on it. The authors of this article must be aware of the fact that there are some individuals who live in the region the article is written about and are continually exposed to the air, water and sun you mention, and that in spite of these things these individuals find it necessary to take vacations elsewhere. There are some individuals for whom a vacation at the seashore is undoubtedly injurious since, through so doing, they are trying to run away from problems and difficulties which are within themselves.

Before the series of articles in this type of therapy is completed, it is suggested that one be secured which gives attention to the total factors operative in this matter.

WILLIAM SHANAHAN, M.D., Honolulu, T. H.
Acting Director, Bureau of Mental Hygiene, Queens Hospital.

USE OF CATHARTICS BEFORE GASTRO-INTESTINAL ROENTGENOLOGY

To the Editor:—In response to my communication in THE JOURNAL of May 27 regarding x-ray studies of the intestinal tract, I have heard from a number of roentgenologists. Their general plea is: We can't show the intestines if they are full of feces and gas, therefore we must use cathartics and enemas. They challenge me to suggest a better way, which of course I am unable to do.

Mostly they speak of "spastic colon" as a diagnosis too readily made.

All I would ask is that the profession shall understand that, for gastrointestinal studies, enemas and cathartics are prescribed by roentgenologists, and that therefore the films show the bowels, not as they normally are, but as they are under the influence of such measures.

WALTER A. BASTEDO, M.D., New York.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, July 22, page 867.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various centers, Aug. 7-9 and Nov. 13-15. Part III. Various centers, September or October. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Part I. Various centers, Jan. 19. Final date for filing application is Oct. 21. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Various centers, Oct. 16. Candidates in military service may take examination at their place of duty. Final date for filing application is August 15. Asst. Sec., Dr. W. A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written. Part I.* Various centers, February. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Oct. 5-7. Los Angeles, January. Final date for filing application is Oct. 1. Sec., Dr. S. Judd Beach, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written. Part I.* Chicago, Oct. 13-14. New Orleans, Sept. 29-30. New York, Oct. 6-7. San Francisco, Oct. 20-21. Final date for filing application is August 1. Sec., Dr. G. A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 4-7. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 22. *Oral.* St. Louis, Nov. 8-9, New York, Dec. 15-16. Final date for filing application is Aug. 15. New York, April 14-15. Final date for filing application is Dec. 15. Chicago, May 19-20. Final date for filing application is Jan. 19. Sec., Dr. C. A. Aldrich, 115½ First Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: *Oral.* New York, December. Final date for filing application is Sept. 30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N.W., Washington 6, D. C.

AMERICAN BOARD OF SURGERY: *Written.* Part I. Various centers, October 25. Final date for filing application is August 15. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Insanity: Irregular Commitment to State Hospital as Affecting Right to Release of Insane Person.—Barbee, an elderly man afflicted with senile psychosis, lived without restraint with his daughter-in-law, Mrs. Barbee. March 16, 1943 one Woods, a brother of Mrs. Barbee, filed what is referred to as a citizen's affidavit of insanity with respect to Barbee with the probate court of Pulaski County, Arkansas. The next day Woods filed and presented to the probate court judge certain interrogatories and answers of two physicians with respect to Barbee's insanity. One of these affidavits was executed by Dr. Rowland on the basis of an examination he had made of Barbee the preceding day. The other affidavit was executed by Dr. Holmes on the basis of an examination he had made of Barbee in February 1943, when he had administered an antirabies treatment to him. The probate court held a hearing on the matter in Barbee's absence and without any notice whatsoever to him and issued a warrant for commitment, directing the sheriff to take Barbee into custody and to deliver him to the superintendent of the Arkansas State Hospital for Nervous Diseases. Mrs. Barbee and Woods requested the sheriff to hold up execution on the warrant until they had decided whether they could care for Barbee without the necessity of commitment. May 26, 1943, on Mrs. Barbee's and Woods' request, the sheriff took Barbee into custody and delivered him to the hospital. On Barbee's arrival at the hospital a diagnosis was made of "senile psychosis, confused type, plus paranoid trend." Shortly thereafter a petition for a writ of habeas corpus was filed on behalf of Barbee, alleging that he was sane and that the proceedings before the probate court were void because of lack of notice to him, because the judge failed to impanel a jury and because there was no competent evidence tending to establish his insanity. At the hearing on the petition Dr. Murphy, a psychiatrist who had examined the petitioner at the request of his attorney, testified that the petitioner had "senile psychosis," that he probably would not recover sufficiently to take care of himself physically or in the business world and that he would require supervision. Dr. Hollis, a member of the hospital staff, testified as to the findings of the hospital staff and that in his opinion Barbee was insane, in all probability would become worse instead of better, that he would require constant care and supervision and that there would be need to prevent him from wandering off and exposing himself to weather and the hazards of traffic. The petitioner himself appeared at the hearing and testified. From an adverse decree by the trial court, Barbee appealed to the Supreme Court of Arkansas.

After the issuance of the warrant of commitment but before Barbee was actually confined to the hospital, a new act respecting the commitment of the insane became effective in Arkansas (Act No. 241, Acts, 1943). This act, said the Supreme Court, is rather comprehensive and greatly modifies the prior law relating to who, and methods by which, persons may become patients in and be discharged from the State Hospital for Nervous Diseases. Because the proceedings in which Barbee was adjudicated insane were had before the effective date of Act 241, we must look to the then existing law to determine whether he was properly committed. For the purpose of this opinion we assume, without deciding, that the commitment proceedings were not in conformity with the then existing law. However, if evidence indicates that one committed to an institution for the insane is actually insane, and such evidence is here present, the court should not order his discharge, regardless of the invalidity of the preceedings under which he was committed, but should direct his continued restraint until such time as proper proceedings can be had for a formal adjudication of insanity. As authority for this statement the court quoted from *Ex parte Smith*, 167 Ark. 80, 266 S. W. 950. In that case this court sustained the action of the lower court in refusing to direct the discharge of a patient, admitted insane, from the U. S. Veterans Hospital, who had been placed therein by his guardian without the formal order of any court. The court there said:

> Under those circumstances, the petitioner is not entitled to an absolute discharge from the custody of the hospital authorities. According to the allegations of the response, which must be taken as true, the hospital authorities rightfully received petitioner into their custody, and the court should not require them to turn him loose and permit him to go at large, if he is afflicted in the manner and to the extent set forth in the response. In this respect the hospital authorities are in the same attitude and are charged with the same duties as any other person having rightful custody of an insane person. The duty is not to abandon an insane person until he can be taken into custody by such person or institution as is charged by law with the duty to care for the insane. The statutes of this state provide that, when a person is insane so as to endanger his own person, or the person or property of others—"it shall be the duty of his guardian, or other person under whose care he may be, and who is bound to provide for his support, to confine him in some suitable place until the next term of the probate court for his county, which shall make such order for the restraint, support and safe-keeping of such person as the circumstances of the case shall require." Crawford & Moses' Dig. sec. 5854. Adequate provision is made by law for the custody and care of insane persons, and of course these statutes have full application to an insane person in the United States Veterans' Hospital, but, until some steps are taken for the legal care and custody of such insane person, the court will not require the absolute discharge of the patient from custody. . . .

Under certain conditions specified in Act 241 of 1943, the court continued, the superintendent of the state hospital may admit persons to the hospital as patients without the order of a court. Under that act he may discharge any person from the hospital who in his opinion is then mentally competent, whether such person was admitted with or without an order of court. Of course, the superintendent would have no authority indefinitely to hold in involuntary custody any person who had not been committed by the proper order of a court of competent jurisdiction. Recognizing that patients admitted without a formal commitment, or through irregular process, might later demand their discharge at a time when their condition was such as to require their continued confinement, the lawmakers, by section 6 of the 1943 act, specifically authorized the superintendent to apply to and obtain from the probate court of the county of any such patient's residence a writ of commitment. If the petitioner's present mental condition is such that his discharge would not be dangerous for either himself or society, and if his mental condition is such that his own best interest does not require that he remain in the hospital for further treatment and supervision, then he should be discharged, but if his condition is to the contrary he should continue as a patient in such institution. If the superintendent of the hospital is of the opinion that the petitioner should be discharged, he is clothed with ample authority to effect his release. On the other hand, if he entertains a contrary conviction, he may and should apply to the probate court of the proper county for the issuance of a writ of commitment in accordance with the act.

The court accordingly modified the decree so as to provide that the petitioner's petition will be dismissed without prejudice to his right again to assert all matters alleged therein if the superintendent shall fail to apply within thirty days to the proper probate court for a writ of commitment.—*Barbee v. Kolb, 179 S. W. (2d) 701 (Ark., 1944).*

Society Proceedings

COMING MEETINGS

Aero Medical Association of the United States, St. Louis, Sept. 4-6. Dr. David S. Brachman, 5440 Cass Ave., Detroit 2, Secretary.

American Congress of Physical Therapy, Cleveland, Sept. 6-9. Dr. Richard Kovacs, 2 East 88th St., New York 28, Secretary.

Delaware, Medical Society of, Lewes, Sept. 11-12. Dr. W. O. La Motte, 601 Delaware Avenue, Wilmington, Secretary.

Kentucky State Medical Association, Lexington, September 18-20. Dr. P. E. Blackerby, 620 S. Third St., Louisville, Secretary.

National Medical Association, St. Louis, Aug. 14-17. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Secretary.

Oregon State Medical Society, Portland, Sept. 2-3. Dr. Thomas D. Robertson, St. Vincent's Hospital, Portland, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Sept. 19-21. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh 22, Secretary.

Utah State Medical Association, Salt Lake City, August 24-26. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 18-20. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

67:247-340 (April) 1944

Complications of Infantile Eczema Caused by Virus of Herpes Simplex: (*a*) Description of Clinical Characteristics of Unusual Eruption and (*b*) Identification of Associated Filtrable Virus. H. A. Wenner. —p. 247.
Factors Influencing Retention of Nitrogen and Calcium in Period of Growth: VI. Calcium and Vitamin D Requirements of Older Child. J. A. Johnston.—p. 265.
Occlusion of Urethral Meatus. M. Muschat.—p. 275.
*Dental Caries as Influenced by Fat versus Carbohydrate in Diet. J. D. Boyd.—p. 278.
Myocarditis in Children. O. Saphir, S. A. Wile and I. M. Reingold. —p. 294.

Dental Caries and Diet.—In the course of observations by Boyd, a sharp break was made in the dietetic regimen, the original high fat diets being replaced by diets which offered only half as much fat and twice the amount of carbohydrates. The observations involve dental courses of 59 girls and 52 boys who were examined recurrently for not less than three years each during a routine management of diabetes. Analyzing the data from the standpoint of the relative protection against caries afforded by the higher versus the lower fat diets, the author noted that such differences as exist bear no constant relationship to the level of fat in the diet. The differences between the values for the groups who received exclusively the higher and the lower fat diets are equivocal. No constant or significant difference in the average rates of progression of caries was found between two groups of children whose fat ingestion differed by 100 per cent. Protection against caries is thought to depend on the common high nutritive worth of the contrasted diets.

American Journal of Public Health, New York

34:435-566 (May) 1944

Preparation of Health Education Personnel for War and Postwar Periods: Responsibility of School of Public Health. H. R. Leavell.—p. 435.
Id.: Supervised Field Work. Lucy S. Morgan.—p. 440.
Id.: Preparation of Public School Teacher. Ruth E. Grout.—p. 446.
Multiple Antigens for Active Immunization. W. E. Bunney and others. —p. 452.
Chemical Warfare—Chemical and Toxicologic Review. J. R. Wood. —p. 455.
Tissue Cultures for Virus Investigations in Field. M. Sanders and C. H. Huang.—p. 461.
Philosophy and Future of Milk Control. J. L. Barron.—p. 467.
Engineering Problems in Use of Glycol Vapors for Air Sterilization. B. H. Jennings and E. Bigg.—p. 477.
Favorable and Adverse Developments in School Environment. A. Wolman, A. H. Fletcher and W. H. Schulze.—p. 484.
Resources of Industry for Health Education. H. N. Calver.—p. 489.
Modern Malaria Control. M. D. Hollis.—p. 494.
United States Chamber of Commerce Public Health Program. H. Strong. —p. 499.
Newer Procedures in Laboratory Diagnosis and Therapy in Control of Bacillary Dysentery. A. V. Hardy and J. Watt.—p. 503.
Problem of Falsely Doubtful and Positive Reactions in Serology of Syphilis. J. A. Kolmer.—p. 510.

Annals of Allergy, Minneapolis

2:85-186 (March-April) 1944

Allergic Pulmonary Consolidations. O. C. Hansen-Pruss and E. G. Goodman.—p. 85.
Skin Reactions to Patch Test with Human Dander. F. A. Simon. —p. 109.
Food Allergy: Role of Food Allergy in Internal Medicine. H. J. Rinkel.—p. 115.
Sensitivity to Minor Pollens. H. L. Rogers.—p. 125.
Molar Standardization of Ragweed Pollen Extracts. G. E. Rockwell. —p. 137.
Sterile Abscess Complicating Alum Precipitated Tetanus Toxoid: Case Report. A. J. Rawson.—p. 145.

Archives of Internal Medicine, Chicago

73:271-364 (April) 1944

*Dermatomyositis. B. V. Jager and L. A. Grossman.—p. 271.
*Studies in Acute Myocardial Infarction: III. Diagnosis and Location of Infarct by Electrocardiogram. S. Baer and H. Frankel.—p. 286.
Life Expectancy After an Attack of Myocardial Infarction: Report of Case of Survival for Nineteen Years After Coronary Thrombosis. G. McHardy and D. C. Browne.—p. 290.
*Palindromic Rheumatism: "New." Oft Recurring Disease of Joints (Arthritis, Periarthritis, Para-Arthritis) Apparently Producing No Articular Residues—Report of 34 Cases; Its Relation to "Angioneural Arthrosis," "Allergic Rheumatism" and Rheumatoid Arthritis. P. S. Hench and E. F. Rosenberg.—p. 293.
Comparative Study of Analgesic Effect of Morphine Sulfate and Monoacetylmorphine. C. M. Jones and W. P. Chapman, with technical assistance of R. Desautels, C. Royer, B. Roth and W. Drucker.—p. 322.
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Electric Shock Therapy in General Hospital. T. J. Heldt, D. D. Hurst and N. P. Dallis.—p. 336.
Use of Synthetic Diet for Food Allergy and Typhoid. W. H. Olmsted, C. G. Harford and S. F. Hampton, with technical assistance of Marjorie Jorgenson.—p. 341.
Diseases of Liver and Biliary Tract: Hepatic Involvement in Various Diseases Related to War. C. H. Greene.—p. 349.

Dermatomyositis.—Jager and Grossman report clinical and laboratory observations and muscle biopsies in 9 cases of dermatomyositis observed in Vanderbilt Hospital. Evidence of involvement of muscles was present in every instance. Frequently there were tenderness, weakness and atrophy of skeletal muscles. Occasionally the so-called vital striated muscles of deglutition and respiration were affected. In all instances biopsy specimens of skeletal muscles revealed certain histologic changes. These microscopic lesions are not specific for this disorder. Similar muscular changes have been observed in rheumatoid arthritis, pneumonia, thyrotoxicosis and other diseases. Involvement of the skin occurred in 7 of the 9 cases. In 2 the mucous membranes of the mouth were affected. In 1 case there was a diffuse scleroderma, and in 2 others sclerodermatous changes were confined to the hands. A history of Raynaud phenomena was elicited in 4 cases. Extensive laboratory studies revealed no constant abnormality other than spontaneous creatinuria. Carbohydrate metabolism, as indicated by several types of tests, was apparently normal. Studies of the reaction to overcooling, as shown by the cutaneous temperature, gave results typical of Raynaud's syndrome in the 4 cases with a history of this disturbance and in 1 case without such a history. The variability of the manifestations was sufficient to arouse doubt as to whether "dermatomyositis" is a single clinical entity. A similar view is obtained from reading previous reports of this disorder. It may be necessary to follow the course of the illness for a prolonged period before the diagnosis can be established with certainty.

Diagnosis and Location of Myocardial Infarct by Electrocardiogram.—Baer and Frankel report that electrocardiograms taken in 321 cases revealed infarction in 94 per cent. On electrocardiographic study alone, 52 per cent of the infarcts were found to be anterior and 34 per cent posterior. Of 74 patients coming to necropsy, 70 per cent had anterior, 23 per cent posterior and 7 per cent anteroposterior infarction. Anterior myocardial infarctions are more frequent and more serious than posterior infarctions. Infarction of the anterior wall of the left ventricle is more apt to be missed by electrocardiograms than posterior involvement. Electrocardiographic diagnosis and location of the infarction are highly accurate.

Palindromic Rheumatism.—Hench and Rosenberg describe an unusual, oft recurring disease of joints and adjacent tissues, 34 cases of which have been studied in the arthritis service of the Mayo Clinic since 1928. Its main features are multiple afebrile attacks of acute arthritis and periarthritis, and sometimes of para-arthritis, with pain, swelling, redness and disability generally of only one, but sometimes of more than one, small or large joint, in an adult of either sex. The attacks appear suddenly and develop rapidly. They generally last only a few hours or days and then disappear completely, but they recur repeatedly at short or long, irregularly spaced intervals. Among the various predisposing factors mentioned by the patients were seasonal and weather influences, menstrual factors, work fatigue, trauma, infection and food sensitivity. Their investigations on the etiology included studies on a possible allergic nature, on an infectious origin and on an angioneurotic

factor. The attacks presented no apparent relationship to acute exogenous infection such as sore throat or influenza, and most of the patients had long since been relieved of infected foci with only temporary or no relief. Angioneurosis was probably not the cause of the articular and other reactions of the palindromic rheumatism. Since the most characteristic feature is the frequent recurrence of the attacks, the authors decided on the term "palindromic," meaning recurring. Numerous treatments had been used by the patients, generally without success. Most of them had fallen back on the use of heat and analgesics during attacks. The remedies tried by the authors were predicated on the idea that the disease might be allergic; later, measures to combat some possible infection were instituted. Neither plan of attack has produced notable results. There appears to be little or no tendency for attacks to become chronic. Despite the thousands of attacks suffered, not a single joint has been crippled permanently.

Archives of Pathology, Chicago

37:227-296 (April) 1944

Renal Phosphatase: Correlation Between Functional Activity of Renal Tubule and Its Phosphatase Content. H. A. Wilmer.—p. 227.
Pancreatic Function and Disease in Early Life: V. Pathologic Changes Associated with Pancreatic Insufficiency in Early Life. S. Farber. —p. 238.
Analysis of Relationship of Seminoma and Arrhenoblastoma to Teratoma. A. E. Rhoden.—p. 251.
Toxicopathologic Studies on S-Methylisothiourea. W. C. Hueper and C. T. Ichniowski.—p. 253.
Demonstration of Lesion Produced by Experimental Poliomyelitis in Central Nervous System of Mouse. Claire Foster and W. Ehrich. —p. 264.
Studies on Inflammation: VI. Inhibitory Action of Tuberculin on Cathepsin. C. Weiss and Nellie Halliday.—p. 272.
Role of Acetylcholine in Anaphylactic Process. S. Farber, A. Pope and E. Landsteiner Jr.—p. 275.
Fate of Polyvinyl Alcohol Introduced Intraperitoneally in Rats. R. H. K. Foster and Lucille Jenkins.—p. 279.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

76:1-122 (May) 1944. **Partial Index**

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Attempts to Produce Jaundice in Horses by Inoculation of Yellow Fever Vaccine. T. C. Jones and F. D. Maurer.—p. 115.

Cancer Research, Baltimore

4:273-336 (May) 1944

Experimental Brain Tumors: V. Behavior in Intraocular Transplants. D. Freeman and H. M. Zimmerman.—p. 273.
Influence of Environmental Temperature on Incidence and Course of Spontaneous Tumors in C3H Mice. E. W. Wallace, Helene Wallace and C. A. Mills.—p. 279.
Effect of Various Factors on Harding-Passey Melanoma of Mouse. K. Sugiura.—p. 282.
Relations to Chick Tissues of Tumors Produced by Yolk Injection Technic. R. E. Hungate, A. Taylor and R. C. Thompson.—p. 289.
Is Cancer a Communicable Disease? L. Gross.—p. 293.
Fluorescent Concentrates from Nonsaponifiable Fractions of Human Livers. R. N. Jones and C. D. May.—p. 304.
Oral Cancer in Bombay, India: Review of 1,000 Consecutive Cases. V. R. Khanolkar.—p. 313.

Iowa State Medical Society Journal, Des Moines

34:183-224 (May) 1944

Medicine in Postwar World. L. R. Woodward.—p. 183.
Heart Clinic. H. L. Smith, E. W. Anderson and G. E. Mountain. —p. 186.
Penicillin in Treatment of Severe Staphylococcic Bacteremia with Complications: Report of Case. J. D. Anderson.—p. 191.
*Intra-Abdominal Apoplexy. A. I. Haugen.—p. 198.
Encephalitis Complicating Measles. W. Cary.—p. 201.

Intra-Abdominal Apoplexy.—Haugen analyzes the 25 recorded cases of intra-abdominal apoplexy with regard to etiology, clinical picture, diagnosis and treatment. He stresses the importance of early recognition of hemorrhage as the cause of the patient's collapse, and on the necessity of prompt and adequate replacement therapy with blood and plasma during and after attempts to secure surgical hemostasis. The preoperative diagnosis can be only tentative in those who have an essentially unruptured hematoma, but on finding such a condition at operation one can usually find the bleeding point. In only 6 of the 20 patients operated on did such circumstances prevail that the surgeon could deal directly with the bleeding vessel, usually by ligation. Five of these 6 patients recovered. On the other hand, those who after one or more episodes of bleeding have developed a massive hemoperitoneum present a picture making a surgeon hesitate to add the risk of operation to their already desperate condition. In 13 such patients operated on the bleeding point could not be found to permit surgical hemostasis; but 8 of these recovered. The immediate indication in these cases is to reestablish an effective circulating blood volume, first to the point of operability by means of intravenous serum or plasma and then, after opening the abdomen, to salvage the large quantity of blood found there and after careful filtration to reinfuse it into the patient's veins. It seems important to keep the patient as comfortable and quiet as possible and to avoid catharsis, enemas, food, rough palpation and other factors that might tend to cause more bleeding. A case is reported which was mistakenly diagnosed as appendicitis while in the simple hematoma stage. After a relatively silent interval of four days there developed recurrent episodes of collapse due to free intraperitoneal bleeding, which proved fatal on the fifth day. Necropsy disclosed a peritoneal cavity full of clotted and liquid blood. The hematoma extended up around the pancreas. The original point of bleeding could not be identified. As in so many of the other recorded cases, it is doubtful that the bleeding point could have been found at operation at any time after the original rupture of the hematoma.

Journal of Aviation Medicine, St. Paul

15:75-148 (April) 1944

Types of Internal Injuries of Personnel Involved in Aircraft Accidents. G. M. Hass.—p. 77.
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Developments in Aviation Medicine in the Field. J. C. Adams.—p. 124.
Medical Service with Army Air Forces. W. S. Jensen.—p. 127.
Prediction of Flight Training Performance by Biographical Data. J. G. Jenkins.—p. 131.
Study in Cockpit Illumination. C. P. Seitz.—p. 136.
Preliminary Report on Occurrence of Muscular Cramps in Fliers in ETO. W. G. Beckman.—p. 138.
Effect of Pavatrine During Anoxia and at High Altitude. W. M. Davidson.—p. 141.
*Parachute Jump from 32,000 Feet Without Oxygen: Report of Case. H. Kirschbaum.—p. 142.

Parachute Jump from 32,000 Feet Without Oxygen.—Kirschbaum reports that a man whose plane caught fire while he was traveling at 32,000 feet jumped from the moving plane at that height. His oxygen tube was torn during the jump. He held his breath as he tumbled. At 30,000 feet he realized that he might become unconscious and therefore pulled the chute cord. He was unable to hold his breath any longer. When the chute opened there was a violent jerk in the right groin due to the crotch straps. His clothing consisted of an ordinary cloth flying suit and leather jacket, and he wore no gloves. After the chute opened, he placed his hands in his arm pits. He lost consciousness at about 30,000 feet and regained it again at about 10,000 feet. He attempted to pull himself up on the ropes of the chute, but he was unable to do so because of weakness of his hands. At 3,000 feet he was very clear, and he made an effort to guide the chute so that it would not fall over him. Weakness of the hands still persisted. The entire descent took twenty-one minutes. He landed on both feet, and the chute fell to the right. He had sufficient presence of mind to advise the farmer who found him not to carry him without a litter. Physical examination revealed a hematoma above Poupart's ligament. There was slight tenderness on pressure in the region of the upper lumbar spine. X-ray examination revealed dislocation of the first lumbar vertebra and disarticulation of the rib at the twelfth thoracic vertebra. Hyperextension treatment on the Bradford frame was advised. He was placed in a plaster jacket in extension after reduction of the lumbar dislocation under gas-ether anesthesia six days after the parachute jump. Two months after the accident he was walking about in a plaster body cast and his general condition was excellent.

Journal of Bone and Joint Surgery, Boston

26:229-434 (April) 1944. **Partial Index**

Fibular Substitution for Tibial Defects. A. G. Davis.—p. 229.
*Neurosurgical Interpretation of Dermatome Hypalgesia with Herniation of Lumbar Intervertebral Disk. J. J. Keegan.—p. 238.
Brackett Operation for Ununited Fracture of Neck of Femur: Report of 34 Cases. M. L. Rowe and R. K. Ghormley.—p. 249.
Significance of Iliocostal Fascial Graft in Treatment of Paralytic Deformities of Trunk. L. Mayer.—p. 257.
Peripheral Nerve Changes Associated with Congenital Deformities. B. H. Moore.—p. 282.
Reduction of Transverse Fractures of Long Bones: Technic Using Flexion and Reverse Flexion. R. D. S. Ramos.—p. 289.
Functional Arthroplasty. J. Hass.—p. 297.
Detailed Operative Technic for Open Reduction and Internal Fixation of Fractures of Long Bones. C. R. Murray.—p. 307.
Resection of Distal End of Ulna. H. B. Boyd and M. M. Stone.—p. 313.
Blastomycosis of Skeletal System: Summary of 27 Recorded Cases and Case Report. P. C. Colonna and T. Gucker.—p. 322.
Surgical Treatment of Internal Derangement of Knee Joint Among Troops in Training at Fort Jackson, South Carolina: An End Result Study. M. Cleveland, L. J. Willien and P. C. Doran.—p. 329.
Open versus Closed Treatment of Acute Osteomyelitis: Clinical Report on Use of Antitoxin and Sulfonamide Drugs With and Without Early Drainage. L. D. Baker, H. J. Schaubel and H. H. Kuhn.—p. 345.
Amputation for Chronic Osteomyelitis. J. A. Key.—p. 350.
Amputation of Lower Leg with Induced Synosteosis of Distal Ends of Tibia and Fibula. C. G. Barber.—p. 356.
Comminuted Fracture-Dislocation of Shoulder. L. S. Michaelis.—p. 363.
Quadricepsplasty to Improve Knee Function. T. C. Thompson.—p. 366.
*Use of Penicillin in Navy. J. S. Barr.—p. 380.
*March Fractures of Femur. H. E. Branch.—p. 387.

Dermatome Hypalgesia with Herniation of Lumbar Intervertebral Disk.—Keegan emphasizes that herniated lumbar intervertebral disks commonly compress single nerve roots and present associated dermatome hypalgesia in the lower extremity, which is accurately diagnostic of the location of the lesion. He presents a new dermatome chart of the lower extremity based on hypalgesia from proved single nerve root loss. These findings are in disagreement with the common dictum that loss of a single nerve root produces no loss of sensation. The nerve root most commonly compressed by herniated intervertebral disk is the first sacral nerve root. Recognition of the syndrome of lesions of the first sacral nerve root, with its characteristic dermatome hypalgesia and loss of the ankle jerk, removes suspicion of extraspinal lumbar pathologic change as a possible cause, as this nerve root is entirely intraspinal until its exit through the first sacral foramen. Subjective and objective numbness and reflex loss are organic neurologic signs not explainable from possible reflex reference from obscure distant pathologic changes. Numbness over the distribution of a single nerve root dermatome necessitates a lesion involving that root. The common occurrence of pathologic changes in the fifth and fourth lumbar disks, leading to later herniation, should be considered more often as a possible explanation of early attacks of low back pain. Manipulative treatment should be directed to reduction of this beginning herniation. Roentgenograms of the lumbar spine should be directed to the disk indicated by the unilateral single dermatome hypalgesia. A conservative attitude should be maintained in surgery of the herniated disk, for in many early cases improvement occurs without surgical intervention; however, with or without operation these patients present some permanent disability which requires back protection. A spine fusion operation is not often indicated because of the unreliability of preoperative selection of cases and the imperfect results of this time consuming procedure. Deliberate section of a nerve root sometimes is warranted and effective to relieve persisting single nerve root pain after an operation for a herniated disk. The nerve is identified by its dermatome hypalgesia. The author performed section of the nerve root in 9 cases.

Use of Penicillin in Navy.—Barr summarizes the 1,976 cases treated with penicillin and reported to the Bureau of Medicine and Surgery prior to Jan. 1, 1944. No serious untoward effects attributable to penicillin were noted. Penicillin is administered either continuously by the intravenous route or intramuscularly every three hours night and day. The average recommended daily dose is 60,000 units if the intravenous route is used, and 120,000 units if the intramuscular route is elected. For critically ill patients combined intravenous and intramuscular penicillin therapy for the first twenty-four hours may be necessary, a maximum of 240,000 units being given by each route during that interval. In mixed infections better results may be obtained by using penicillin and sulfonamide therapy concurrently than would be the case if either was used alone. Frequently repeated blood transfusions appear to be of value in reinforcing the patient's hemopoietic system. Topical application in soft tissue wounds and in osteomyelitis appears to be of therapeutic value. It may be applied in saline compresses containing 250 units per cubic centimeter of solution. The solution should be trapped at the site of the lesion and should be renewed every six to eight hours. Simple irrigation is not effective. Sulfonamide resistant gonorrhea responds dramatically to penicillin therapy; 99 per cent of 1,750 cases were cured by the treatment. Diseases due to Streptococcus haemolyticus, Staphylococcus aureus, Clostridium welchi, pneumococcus, meningococcus, and certain other organisms are also favorably affected, although the results are not so striking as in gonorrhea. Fifty per cent of the cases of osteomyelitis appear to have been cured by a combination of penicillin therapy and surgery. Long standing chronic cases in which there is bone sclerosis with deep seated walled off pockets of infection appear to be less amenable to treatment than acute cases. Adequate, well planned surgery is still necessary in osteomyelitis.

March Fracture of Femur.—According to Branch, march fracture is most common in the second and third metatarsals, owing to the foot going into pronation under fatigue and then letting the weight come on the plantar and medial sides of the metatarsal heads, tending to twist the shafts of the metatarsals dorsolaterally. The bone affected next in order of frequency is the tibia, usually in the middle third. This fracture occurs most often in infantry recruits. The fibula may be affected in two typical sites: 1. Proximal, a palm's breadth below the head; this lesion occurs usually in gunners and is due to their jumping back and forth from the gun carriage. 2. Distal, just above the external malleolus; this type is commonly found in ice skaters. Fracture of the femur has been considered most common in the lower third. Fracture of the neck of the femur is not uncommon but is often unrecognized. Fractures of the femoral shaft are taught to be due to running in a crouched position or to the strain of marching with full packs. Added factors are the rotary mechanism in the hip joint and the traction that the hip muscles exert. Fractures of the shaft of the humerus occur in hand grenade throwers. The os calcis is fractured usually a finger's breadth beyond the subastragalar joint and is probably due to prolonged marching. The author presents 1 case of march fracture of the femoral shaft and 3 cases of march fracture of the neck of the femur, all of which have been treated at the Harmon General Hospital in the last seven months. Soldiers complaining of symptoms simulating muscle strain, bursitis and the like should have roentgenograms taken to rule out this type of fracture. Insufficiency or exhaustion fracture is probably a better term than march fracture.

Journal of Clin. Endocrinology, Springfield, Ill.

4:95-146 (March) 1944

Correlation of Ovarian and Endometrial Histology, Vaginal Epithelium, Gonadotropic Hormonal Excretion and Day of Menstrual Cycle in 28 Women. C. G. Heller, J. P. Farney, D. N. Morgan and G. B. Myers.—p. 95.
Development and Correlation of Menopausal Symptoms, Vaginal Smear and Urinary Gonadotropin Changes Following Castration in 27 Women. C. G. Heller, J. P. Farney and G. B. Myers.—p. 101.
*Effect of Small and Large Doses of Diethylstilbestrol on Menopausal Symptoms, Vaginal Smear and Urinary Gonadotropins in 23 Oophorectomized Women. C. G. Heller, R. E. Chandler and G. B. Myers.—p. 109.
Effects of Massive Doses of Testosterone Propionate on Spermatogenesis. R. S. Hotchkiss.—p. 117.
Treatment of Breast Cancer with Testosterone Propionate: Preliminary Report. E. Fels.—p. 121.
Experimental Studies of Sexual Behavior in Male Mammals. F. A. Beach.—p. 126.
Sex Endocrines in Development and Prepuberal Life. C. R. Moore.—p. 135.

Diethylstilbestrol for Oophorectomized Women.—Heller and his associates investigated the effect of relatively small and relatively large oral doses of diethylstilbestrol on menopausal symptoms, vaginal smears and urinary gonadotropins in 23 women who had been subjected to bilateral oophorectomy and followed postoperatively until the menopausal syndrome

had been firmly established. Daily doses of 0.5 mg. by mouth alleviated menopausal symptoms in 20 cases and had an estrogenic effect on the vaginal mucosa in all 23 cases but did not suppress gonadotropic excretion. The average titer of gonadotropins during the administration of this dosage was slightly higher than before treatment, because of increased output of the luteinizing fraction (interstitial cell stimulating hormone). The symptomatic and physiologic effects of the 0.5 mg. dose of diethylstilbestrol were not mediated through the anterior pituitary gland. Daily doses of 5 mg. of diethylstilbestrol administered for one month or longer in 8 cases caused complete suppression of gonadotropic output. Discussing the relationship between the pituitary and the ovary, the author stresses the following points: 1. Gonadotropic hormone is utilized by normal ovaries but not by castrates or ovaries with impaired function, as a consequence of which much larger amounts are available for excretion. 2. Estrogens administered in small amounts increase the output of the luteinizing hormones. It is probable that peaks of estrogen production by the normal ovary have a similar effect. 3. The fluctuations in gonadotropin excretion during the normal menstrual cycle may be due either to variations in the amount of luteinizing hormone produced or to variations in the amount of gonadotropin utilized by the ovaries. 4. Large doses of estrogens administered to castrates have the opposite effect from small doses, suppressing or completely inhibiting gonadotropic output. The suppression by large doses may represent an exhaustion of secretory granules of the pituitary cells. It is possible that long continued smaller doses may have a like effect. Administered estrogens may have similar effects in normal females.

Journal of Infectious Diseases, Chicago

74:81-172 (March-April) 1944. **Partial Index**

Inhibition of Human Isoagglutinins by Polysaccharide from Ascaris Suum. J. Oliver-González.—p. 81.
Study of Mechanism of Relapse in Avian Malaria. J. E. Gajewski and A. L. Tatum.—p. 85.
Bacteriology of Artificially Produced Necrotic Lesions in Oropharynx of Monkey. Florence C. Kelly.—p. 93.
Studies on Virus Disease Originating in Guinea Pig Injected with Ticks (Dermacentor Andersoni Stiles). F. A. Humphreys, D. E. Helmer and R. J. Gibbons.—p. 109.
Susceptibility of Cane Rat (Zygodontomys) and of Bush Rat (Proechimys) to Influenza Viruses. J. M. Weir.—p. 121.
Study of Isolation, Cultivation and Pathogenicity of Actinomyces Israeli Recovered from Human Mouth and from Actinomycosis in Man. T. Rosebury, Lillian J. Epps and Ada R. Clark.—p. 131.
Experimental Clostridium Welchi Infection. Lucile R. Hac and Agnes C. Hubert.—p. 150.

Journal of Lab. and Clinical Medicine, St. Louis

29:451-560 (May) 1944

Effect of Chemotherapeutic Sulfa Drugs on Growth of α-Hemolyticus Streptococcus. W. Bierman, G. Shwartzman and Sylvia I. Rosenberg.—p. 454.
Effect of Certain Salts on Activity of Sulfacetamide. B. D. Pinck, Gladys L. Morton and Marjorie R. Mattice.—p. 462.
*An Intradermal Test for Vitamin C Subnutrition. L. B. Slobody.—p. 464.
Persistence of Falsely Positive Serologic Tests for Syphilis in Non-syphilitic Infections. A. E. Taussig.—p. 473.
Deaths Following Use of Local Anesthetics in Transcricoid Therapy: Critical Evaluation. V. J. Derbes and H. T. Engelhardt.—p. 478.
Role of Creatine in Cell Growth in Vitro and Its Use in Wound Healing. S. Caspe.—p. 483.
Studies in Combined Diuretic Therapy. A. Ruskin and G. R. Herrmann.—p. 486.
Human Serum Treatment of Atypical Pneumonia. E. M. Solomon.—p. 493.
Case of Meningitis in Premature Infant Due to Proteolytic Gram Negative Bacillus. B. H. Shulman and Mary S. Johnson.—p. 500.
Sternal Bone Marrow in Aged. C. Reich, M. Swirsky and Dorothy Smith.—p. 508.

Intradermal Test for Vitamin C Subnutrition.—Slobody made studies on animals and human subjects with various concentrations of a test solution. He shows that raising a 4 mm. wheal with 300th normal dichlorphenol indophenol solution will indicate vitamin C subnutrition states. Of 59 patients with blood vitamin C levels below 0.3 mg. the skin test times were more than 14 minutes in 54. In 10 children on vitamin C deprivation diets the blood levels fell and the skin test times became prolonged. The skin test times were then reduced to normal following administration of ascorbic acid. A skin test time of more than 14 minutes suggests definite body unsaturation, from 9 to 13 minutes mild unsaturation and less than 9 minutes a normal amount of vitamin C in the body tissues. Different tests give information on various aspects of the vitamin C nutritional state and thus will not always correlate. The blood level reflects only recent dietary intake. The skin test parallels the degree of body saturation. Gross and biomicroscopic changes in the gums demonstrate actual tissue changes.

Journal-Lancet, Minneapolis

64:133-172 (May) 1944

Types of Congenital Heart Diseases in 15,597 Autopsies. B. J. Clawson.—p. 134.
*Patent Ductus Arteriosus. M. J. Shapiro.—p. 137.
*Preventing Rheumatic Recrudescence: Consideration of Several Modes of Prophylaxis Available to Rheumatic Patient. Miriam M. Pennoyer and A. E. Hansen.—p. 139.
Diphtheritic Myocarditis in Which Clinical Diphtheria Was Missed: Case Report. Alice Brill.—p. 142.
New Interpretations of Allergy Cutaneous Tests. A. V. Stoesser.—p. 145.
Growth and Development of Premature Quadruplets. W. E. G. Lancaster.—p. 147.
Duodenal Obstruction in Newborn. O. S. Wyatt.—p. 152.
Involvement of Colon in Newborn Infant. L. F. Richdorf.—p. 156.
Appendix as Pediatric Problem. W. R. Shannon.—p. 158.
Children's Psychosomatic Complaints and War. R. A. Jensen.—p. 161.
Observations on Infantile Paralysis: Its Symptoms and Treatment. M. E. Knapp.—p. 164.

Patent Ductus Arteriosus.—According to Shapiro it is no longer sufficient to make a broad diagnosis of congenital heart disease, since with the present diagnostic aids it is generally possible to identify the lesion more exactly. This is particularly true of simple uncomplicated patency of the ductus arteriosus. Two types of patency of the ductus occur. Failure of closure may accompany a developmental defect of the heart and the open ductus may be the only possible escape for the abnormal circulation. In such instances the flow of blood usually continues as in the fetal circulation; that is, blood flows from the pulmonary artery to the aorta, thereby resulting in cyanosis. The other type of patency occurs as a simple failure of closure and is accompanied by no other cardiac abnormalities. It is this type of case which lends itself to surgical ligation. The author lists the following diagnostic criteria of patent ductus arteriosus: (1) history of heart disease from birth or early childhood; (2) no cyanosis or clubbing of the fingers; (3) stunting of growth in a small percentage of cases; (4) probable thrill over the pulmonic area; (5) characteristic machinery murmur; (6) increased pulse pressure; (7) enlargement of pulmonary artery and branches; (8) normal electrocardiograph; (9) probable enlarged heart. The great majority of patients with patent ductus arteriosus develop some cardiac difficulty in early adulthood. It is quite rare to examine a patient with patent ductus arteriosus over the age of 40. When the diagnosis of uncomplicated patent ductus can be made, surgery should be seriously considered, particularly in patients showing evidence of cardiac strain. In Minneapolis 19 patients with patent ductus arteriosus have been referred for surgical treatment. These patients ranged in age from 3 to 19 years. The ligation has been successfully carried out in 16 instances. Two patients died of hemorrhage. One child developed a blood stream infection about two months after operation, from which she subsequently died. The clinical results in the successful cases have been satisfying.

Preventing Rheumatic Recrudescence.—In the past, efforts to prevent recrudescences consisted in emphasizing certain generally hygienic fundamentals. A well balanced diet high in vitamins B and C, a warm, sunny climate where protection from dampness and chilling is possible, and the avoidance of respiratory infections have been stressed. Because such methods have been inadequate, investigators have adopted immunologic and chemotherapeutic measures. Pennoyer and Hansen utilized prophylactic sulfonamide therapy in the Pediatric Cardiac Clinic of the University of Minnesota Hospital with results similar to those of other workers over a period of from 1938 to 1943. Analysis of cases in which recurrences developed in spite of the sulfonamide therapy revealed that in most cases the drug was being taken irregularly or inadequately, or it had been temporarily discontinued by the patient. Although sulfonamide prophylaxis is not free from danger and requires close medical

supervision, it may reasonably be expected to prevent many rheumatic recurrences and materially affect the mortality associated with this disease. It consists in the prevention or attenuation of streptococcic infections by the continued maintenance of a low blood level of a sulfonamide. Alternative methods of prophylaxis such as immunization against streptococci and control of streptococcic infections with salicylates are available for patients who do not tolerate the sulfonamides.

Journal of Nat. Cancer Inst., Washington, D. C.

4:429-538 (April) 1944

Administration of National Cancer Institute Act, Aug. 5, 1937 to June 30, 1943. O. Marshino.—p. 429.
Evaluation of Breast Cancer Therapy as Guide to Control Programs. J. W. Hawkins.—p. 445.
Chemical Treatment of Tumors: IX. Reactions of Mice with Primary Subcutaneous Tumors to Injection of Hemorrhage Producing Bacterial Polysaccharide. M. J. Shear, with technical assistance of A. Perrault.—p. 461.
Experimental Roentgen Injury: I. Effects of Tissues and Blood of C3H Mice Produced with Single Small Whole Body Exposures. P. S. Henshaw.—p. 477.
Id.: II. Changes Produced with Intermediate Range Doses and a Comparison of Relative Susceptibility of Different Kinds of Animals. P. S. Henshaw.—p. 485.
Id.: III. Tissue and Cellular Changes Brought About with Single Massive Doses of Radiation. P. S. Henshaw.—p. 503.
Id.: IV. Effects of Repeated Small Doses of X-Rays on Blood Picture, Tissue Morphology and Life Span in Mice. P. S. Henshaw.—p. 513.
Minimal Number of Anesthetic Treatments with Urethane Required to Induce Pulmonary Tumors. P. S. Henshaw and H. L. Meyer.—p. 523.
Changes in Adrenal Glands of Rats Following Exposure to Lowered Oxygen Tension. A. J. Dalton, E. R. Mitchell, B. F. Jones and Virginia B. Peters.—p. 527.
Origin of Hepatoma E of Strain C3H Mice. Emily Walcott Emmart.—p. 537.

Journal of Nervous and Mental Disease, New York

99:457-888 (May) 1944. **Partial Index**

Reconstructive Orthopedic Surgery for Disabilities Resulting from Irreparable Injuries to Radial Nerve. L. C. Abbott.—p. 466.
Effect of Desoxycorticosterone in Epilepsy. R. B. Aird.—p. 501.
Cushing's Syndrome. Evelyn Anderson and W. Haymaker.—p. 511.
Progressive Lenticular Degeneration. Olga Bridgman and F. S. Smyth.—p. 534.
The Epileptic Driver. W. E. Carter.—p. 573.
Papilledema (Choked Disk) and Papillitis (Optic Neuritis): Their Differential Diagnosis. F. C. Cordes and S. D. Aiken.—p. 576.
Anorexia Nervosa or Simmonds' Disease? Notes on Clinical Management with Some Points of Differentiation Between the Two Conditions. R. F. Escamilla.—p. 583.
Some Neurophysiologic Aspects of Menstrual Cycle and Its Disturbances. P. G. Fuerstner.—p. 588.
Sighing and Other Forms of Hyperventilation Simulating Organic Disease. P. A. Gliebe and A. Auerback.—p. 600.
Wartime Ocular Neuroses. D. O. Harrington.—p. 622.
Immediate Care of Unconscious Patient. H. R. Hathaway.—p. 636.
Euthanasia. F. Hinman.—p. 640.
Treatment of Post-Traumatic Head Pain. O. W. Jones Jr. and H. A. Brown.—p. 668.
Aviation Medical Problems, with Special Reference to Altitude Pain. J. H. Lawrence.—p. 703.
Subarachnoid Hemorrhage Due to Intracranial Rheumatic Aneurysm. S. Lindsay.—p. 717.
Hypophysectomy in Cushing's Disease (Report of Case Operated on by Dr. H. C. Naffziger, December 1933). H. Lisser.—p. 727.
Repair of Peripheral Injuries of Facial Nerve. R. C. Martin.—p. 755.
Acromegaly and Diabetes Mellitus. H. C. Shepardson.—p. 862.
*Exophthalmos Secondary to Edema and Degenerative Changes in Orbital Tissues. M. H. Soley, with assistance of Jean Hitch.—p. 865.

Exophthalmos Secondary to Edema and Degenerative Changes in Orbital Tissues.—Soley discusses the extreme degree of exophthalmos for which Naffziger recommended orbital decompression. At the thyroid clinic of the University of California a considerable number of patients have been encountered in whom exophthalmos has been a presenting feature, and yet the majority of these patients have had about the same degree of hyperthyroidism, the same size thyroids and the same levels of oxygen consumption as the average run of patients with thyrotoxicosis in whom exophthalmos was not prominent. The author reviews the history of 37 patients with severe exophthalmos. The symptoms of exophthalmos were "pop-eyes," excessive watering, photophobia, blurring of vision, either persistent diplopia or diplopia with eye fatigue, swelling about the eyes, conjunctival injection, scratchy lids, frontal headaches and pain on pressure against the eyeballs. The signs were exophthalmos, periorbital and scleral edema, injection of the scleras, widened palpebral fissures, lid lag, frequent winking (probably due to drying and irritation of the globe), impaired convergence often more pronounced in one eye, and in the worst cases engorged retinal veins, papilledema and corneal ulceration. Twenty-five of these patients had thyrotoxicosis at the time their exophthalmos was a presenting complaint. Their basal metabolic rate, the size of their thyroid, their age and other factors did not differ materially from routine thyrotoxic patients. Special interest in the problem of exophthalmos probably accounts for the rather large number of patients who presented severe ocular symptoms early in the course of their disease before they were treated. The author believes it is important to segregate such patients and to consider the condition of their eyes with special care. If the patient has hyperthyroidism when first seen, x-ray therapy to the thyroid is preferred to subtotal thyroidectomy in order to allow a more gradual return to a healthy thyroid status and to avoid the complication of myxedema. However, if the goiter is large or nodular, operative treatment is still indicated and the patient should be reexamined frequently afterward. Indications for orbital decompression are changes in function of extraocular muscles (paresis or complete loss of function), impairment of vision, corneal ulceration or pronounced edema of the conjunctivas or scleras. Because progression of exophthalmos occurs in nearly half of all thyrotoxic patients who have subtotal thyroidectomy for hyperthyroidism, patients in this category should be watched most carefully following thyroidectomy.

Medical Annals of District of Columbia, Washington

13:133-166 (April) 1944

Weil's Disease in District of Columbia: Report of 4 cases. B. Manchester, C. L. Larson and L. J. Thomas.—p. 133.
Some Medical Lessons of Mobilization. A. C. Christie.—p. 139.
Some Epidemiologic Aspect of Meningococcal Meningitis in District of Columbia. C. C. Dauer.—p. 146.
Rheumatic Orchitis Associated with Rheumatic Pericarditis and Effusion: Report of Case. A. Trasoff and D. H. Goodman.—p. 149.

Michigan State Medical Society Journal, Lansing

43:353-448 (May) 1944

Small Unrecognized Strokes: Common Cause of Illness in Older Persons. W. C. Alvarez.—p. 389.
Small Diphtheria Outbreak in Sturgis. F. A. Musacchio.—p. 392.
Methods of Personality Study in Relation to Medical Practice. J. C. Whitehorn.—p. 395.
Palindromic Rheumatism (Hench's Disease). J. G. Grego and H. N. Harkins.—p. 401.
Wartime Obstetrics. E. D. Plass.—p. 402.
An Interlocking Finger Bandage Which Needs No Anchor. H. H. Pool.—p. 406.

Military Surgeon, Washington, D. C.

94:243-324 (May) 1944. **Partial Index**

Treatment of War Fractures. R. I. Harris.—p. 246.
*Contribution to Treatment of Traumatic Peritonitis. B. Hejduk.—p. 250.
Surgery in the Desert. A. E. Porritt.—p. 255.
Early Medical Service in New Guinea. L. S. Engleberger.—p. 258.
Arteriovenous Fistula: Report of 4 Cases. W. C. Reed and W. F. Dillon.—p. 261.
Cardiovascular Injuries in War. A. M. Master.—p. 265.
*Hemolytic Transfusion Reaction Due to Rh Factor. R. P. Howell and R. E. Hobbs.—p. 269.
Osteoperiostitis Following Meningococcus Meningitis: Case Report. M. G. Brown and E. E. Gottdiener.—p. 270.
Fundamentals of Facial Moulage. V. H. Dietz.—p. 271.
Surgical Plan of Tropical Station Hospital. M. N. Camp.—p. 281.
Veterinary Oyster Inspection. A. H. Bryan.—p. 282.
Line of Duty. C. Stritzler.—p. 286.
Traumatic Tenosynovitis in Training Camp. F. N. Volk.—p. 293.
Prevention of Fly Borne Diseases in Islet and Atoll Warfare. L. S. Baer and R. F. Allen.—p. 296.
Therapy of Tinea. R. N. Lawson.—p. 301.
Simple Field Test for Chlorides in Water. S. Kaye and J. C. Castillo.—p. 302.
Use of Engineer Stream-Crossing Equipment to Transport Litter Patients. A. B. Ranney.—p. 303.

Treatment of Traumatic Peritonitis.—According to Hejduk, internal bleeding and shock are the commonest causes of death in abdominal injuries during the first twenty-four hours. Peritonitis is a later danger and follows a rupture of a hollow viscus or infection of the effused blood. The purulent contents of the abdominal cavity are removed either by dry wiping or by irrigation. Opinions about the effectiveness of these methods are divided. Hejduk worked for nine years

under a chief surgeon who was a partisan of radical irrigation and for seven years at a university clinic where only the drying method was employed. The drying of the abdominal cavity is simple, quick and efficient. Some employ this procedure in all cases of peritonitis, even in traumatic ones. The advantage of the drying method is that the infective material is not diluted and spread all over the peritoneum. Therefore even some partisans of irrigation prefer to perform drying in the early stages. In war surgery it has the advantage that it does not require special equipment and is therefore practicable even under primitive circumstances. The author thinks that in serious progressive cases of peritonitis or in cases with highly virulent infection, irrigation gives better results than the drying method. Also the intra-abdominal postoperative abscesses and fibrous intraperitoneal adhesions are less common after irrigation. He is convinced that lavage under pressure, provided it is done with from 30 to 50 liters of saline solution, as employed by Bakeš of Czechoslovakia, is the best method to remove quickly and gently liquid blood, blood clots, detached particles of viscera, gastric or intestinal contents, urine, particles of missiles or clothing found within the peritoneal cavity. Perforations of the intestine can easily be discovered during irrigation when the irrigating fluid becomes turbid. It is hoped that the average mortality of 8 per cent achieved by Bakeš with irrigation under pressure will in the future be lowered even more by the combined use of lavage and the administration of sulfonamide compounds or penicillin.

Hemolytic Transfusion Reaction Due to Rh Factor.—Howell and Hobbs describe a transfusion reaction which occurred in an army officer aged 45 who was given a transfusion following an operation. He had had two previous transfusions, the first in January 1938 with no reaction and the second in March 1938 followed by a severe chill and fever. The possibility that a reaction might occur due to Rh incompatibility was considered, but no anti Rh serum was available. The patient was given 400 cc. of citrated whole blood by the drip method over a period of ninety minutes. Forty-five minutes after the completion of the transfusion he had a severe chill. His temperature rose to 102 F. He developed jaundice, the icterus index rising to 62 units within sixteen hours of completion of the transfusion. In the next twenty-four hours he voided only 90 cc. of urine containing large amounts of urobilinogen. He recovered slowly, over a period of several weeks. Anti Rh serum was obtained, and it was found that the recipient's cells were Rh negative. Rh positive agglutinins were demonstrated in his serum. The donor's cells were Rh positive. The authors stress the necessity of determining the Rh factor in recipients of repeated blood transfusions.

New England Journal of Medicine, Boston

230:501-532 (April 27) 1944

Androgen Control in Carcinoma of Prostate. J. P. Bowler and S. F. Pedley.—p. 501.
Socioeconomic Aspects of Dental Caries: Community and Individual Study of Dental Caries in Selectees. R. W. Hyde, with assistance of D. J. O'Connell and G. A. Lenzi.—p. 506.
In Vitro Action of Sulfamerazine, Phthalylsulfadiazine, Phthalylsulfamerazine and Phthalylsulfathiazole on Enteric Pathogens. F. B. Schweinburg and I. J. Yetwin.—p. 510.
Hematology. W. Dameshek.—p. 514.

230:533-566 (May 4) 1944

*Alloxan Diabetes with Diabetic Complications. C. C. Bailey, O. T. Bailey and Rachel S. Leech.—p. 533.
Infections Associated with Epidemic of Primary Interstitial Pneumonia. C. B. Favour.—p. 537.
Hematology (concluded). W. Dameshek.—p. 542.

Alloxan Diabetes with Diabetic Complications.—Bailey and his associates describe the occurrence of diabetic cataracts in rabbits made permanently diabetic by the use of alloxan. Bilateral diabetic cataracts developed in four to six weeks in rabbits made diabetic with alloxan. The production of alloxan diabetes in rabbits depends on the dosage. Repeated injections of 20 mg. per kilogram were not sufficient to produce diabetes. Forty milligram doses produced diabetes within two weeks in 2 rabbits, suggesting a cumulative effect of alloxan with the larger dose. Microscopic studies of the pancreas in 2 rabbits immediately after the production of diabetes by the repeated injection of 40 mg. of alloxan per kilogram revealed that some cells of the islets of Langerhans showed hydropic degeneration, others showed irreversible changes and some were essentially normal, whereas occasional cells were in the process of mitotic division. The pancreatic acini were normal. In rats the subcutaneous administration of 200 mg. of alloxan per kilogram is feasible for producing diabetes. The occurrence of cataracts and of diabetic acidosis and coma in the rat is reported.

New York State Journal of Medicine, New York

44: 1057-1168 (May 15) 1944

Early Diagnosis and Early Treatment of Congenital Dislocation of Hip. F. R. Thompson.—p. 1095.
Treatment of Pneumonia with Sodium Sulfapyridine and Sodium Sulfathiazole Administered Orally. E. H. Loughlin, R. H. Bennett, S. H. Spitz and Mary E. Flanagan.—p. 1103.
Cause of Psoriasis. A. E. Goldfarb.—p. 1111.
Importance of Latent Parenchymal Disease of Liver in Surgery. A. O. Wilensky.—p. 1115.
Pentothal Sodium Anesthesia in Major Surgery. D. Battaglia and B. A. Winne.—p. 1120.
Clinical Study of 165 Cases in Which Sodium Ethalyl was Used as Hypnotic and Sedative. C. H. Nammack and Mary Finck.—p. 1124.
Simple Aphasia Study. H. M. Somberg and H. V. Ingham.—p. 1126.

Quarterly J. Studies on Alcohol, New Haven, Conn.

4:517-676 (March) 1944

Intellectual Functions in Alcoholic Psychoses. Anne Roe and D. Shakow.—p. 517.
Expectation of Alcoholic Mental Disorder in New York State, 1920, 1930 and 1940. B. Malzberg.—p. 523.
Alcohol Problem and Law: I. Ancient Laws and Customs. E. G. Baird.—p. 535.
Role of Social Work in Treatment of Inebriates. Marjorie H. Boggs.—p. 557.
Youth, Alcohol and Delinquency. F. W. McPeek.—p. 568.
Pathologic Reaction to Alcohol: I. Review of Literature and Original Case Reports. R. S. Banay.—p. 580.
Classics of Alcohol Literature: Early Medical and Official Views on Rations of Spirits in Army and Navy of United States.—p. 606.

Rocky Mountain Medical Journal, Denver

41:297-360 (May) 1944

*Curare as Adjuvant During Inhalation Anesthesia: Report of 50 Cases. S. M. Smith.—p. 313.
Transversalis Fascia: Neglected Layer in Abdominal Surgery. H. E. Campbell.—p. 317.
Bilateral Traumatic Dislocation of Hip. G. Whiston.—p. 319.
Hodgkin's Disease with Marked Eosinophilia. W. S. Williams and K. T. Neuberger.—p. 320.

Curare as Adjuvant During Inhalation Anesthesia.—According to Smith, curare has been subjected to a thorough pharmacologic study and a product has been obtained which seemed safe for human trial. It is known under the term "intocostrin." Curare has been used in convulsive states, in preventing fractures during metrazol shock and in the treatment of spastic disorders. Cullen in 1940, seeking an aid to anesthesia that would give ideal relaxation, administered curare to dogs. Griffith and Johnson reported its use on 25 patients anesthetized with cyclopropane. Smith administered curare to relieve the muscle spasm in poliomyelitis unanesthetized, and in cases anesthetized with pentothal sodium and with cyclopropane. He administered intocostrin in 1 case of tetanus and in 50 as an adjuvant during inhalation anesthesia. The typical curare action consists of an interruption of nervous impulses at the termination of the nerve fibers at the muscle cells. It probably consists in neutralization of the acetylcholine reaction which constitutes the fundamental neuromuscular stimulation mechanism. Intocostrin seems to exert no effect on the heart or peripheral circulation. The maximum effect of curare when given intravenously seems to occur within one to two and a half minutes. Overdose leads to respiratory paralysis, the treatment for which is adequate artificial respiration with oxygen. Neostigmine and physostigmine are specific antidotes. The use of pentothal sodium only as an induction agent does not appreciably increase respiratory depression. Temporary relief of muscular spasm in poliomyelitis has been obtained by the use of curare alone and in combination with both cyclopropane and pentothal anesthesia. Curare appears to be one of the greatest aids introduced into the field of anesthesiology, but its use should not be indiscriminate. It should be administered by those thoroughly familiar with its actions.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

13:147-216 (Jan.) 1944

Restoration After Excision for Malignant Disease. H. P. Pickerill. —p. 147.
Significance of Hypothenar Elevation in Movements of Opposition of Thumb. S. Sunderland.—p. 155.
Flexion of Distal Phalanx of Thumb in Lesions of Median Nerve. S. Sunderland.—p. 157.
*Voluntary Movements and Deceptive Action of Muscles in Peripheral Nerve Lesions. S. Sunderland.—p. 160.
Fractures of Facial Bones. B. K. Rank.—p. 184.
*Shattering Gunshot Wound of Elbow. J. Devine.—p. 208.

Deceptive Action of Muscles in Peripheral Nerve Lesions.—Sunderland describes trick or supplementary movements which have been observed in 170 cases of peripheral nerve injuries. These are voluntary movements which can still be effectively carried out even when those muscles customarily held to be responsible for their execution have been deprived of their nerve supply. Trick movements have been recorded in isolated and combined lesions of all the main peripheral nerves. The immediate recognition of such movements in peripheral nerve injuries is of considerable importance, since the failure to detect them will lead to false estimates of the extent of the nerve lesion and the progress of regeneration. This will in turn result in incorrect diagnoses and in unjustified optimism concerning either the progress of spontaneous regeneration or the efficacy of a surgical procedure designed and undertaken to facilitate regeneration.

Shattering Gunshot Wound of Elbow.—Devine reports a case in which the left elbow was a pulpy mass, and the forearm dangled by bridges of soft tissue anterolaterally. Three to 4 inches of the upper ends of the radius and ulna were missing, along with the ulnar nerve. The wound was blackened and soiled. The wound was subjected to débridement, covered with sulfanilamide powder and petrolatum gauze, and the whole limb from shoulder to hand was encased in a plaster. After operation 4 Gm. of sulfanilamide was administered daily for some days. Several days after the operation, pain and swelling of the hand necessitated removal and replacement of the plaster, which was done with the arm at an angle of about 130 degrees of flexion and slight pronation. This angle was chosen because the patient said that in the event of the hoped for ankylosis occurring this position would be the most advantageous position for him in his clerical occupation. The man was returned from Tobruk to Australia, and on the trip home he had the usual low grade infection of his wound and had his plaster renewed once. Six months after he had been wounded he had progressing union between the various fragments and was having active movements. Ten months after wounding he commenced clerical work. Now, eighteen months after his wounding, he performs his everyday tasks such as shaving and dressing without assistance and can hold a matchbox in his left hand. He has continued his clerical work.

Journal of Physiology, Cambridge

102:373-496 (April) 1944

Anaphylaxis to Serum Proteins in Guinea Pig. L. B. Winter.—p. 373.
Study of Dehydration by Means of Balance Experiments. D. A. K. Black, R. A. McCance and W. F. Young.—p. 406.
Secretion of Urine During Dehydration and Rehydration. R. A. McCance and W. F. Young, with assistance of D. A. K. Black. —p. 415.
Renal Function of Newborn Infants. H. Heller.—p. 429.
Determination of Plasma Volume by Evans Blue Method: Analysis of Hemolyzed Plasma. C. J. O. R. Morris.—p. 441.
Changes Occurring in Plasma and Serum on Storage and Their Physiologic Effects. H. P. Gilding and Marjorie E. Nutt.—p. 446.
Reversibility of Carbohydrate and Other Changes in Rats Shocked by Clamping Technic. R. E. Haist and J. I. Hamilton.—p. 471.
Absorption of Serum Proteins from Intestine of Sensitized Guinea Pig. L. B. Winter.—p. 484.
Excretion of Diodone by Isolated Perfused Dog Kidney. A. Hemingway and A. Schweitzer.—p. 491.

Schweizerische medizinische Wochenschrift, Basel

73:473-496 (April 17) 1944. **Partial Index**

Surgery of Bone Fractures. G. A. Preiss.—p. 473.
Suction Drainage of Cavities in Pulmonary Tuberculosis, with Special Consideration of Duration of Treatment. S. J. Leitner.—p. 475.
*Dimethyl Sulfate Poisoning. O. Merkelbach.—p. 481.

Dimethyl Sulfate Poisoning.—The list of industrial poisons issued by the Swiss Society of Industrial Chemistry in 1935 states that dimethyl sulfate is quickly absorbed and that it injures the renal and vascular system. According to Merkelbach dimethyl sulfate is colorless and insoluble in water. It has a boiling point of 187 C. and is rather volatile. It is an irritating and corrosive toxin and acts particularly on the respiratory organs. The onset of clinical symptoms is preceded by a latent period of several hours. In this respect its action is comparable to that of phosgene. Three types of processes resulting from dimethyl sulfate poisoning have been observed in animal experiments. Continuous chronic intake of small sublethal doses results in a cachectic condition as does phosgene poisoning. Clinically the following changes are differentiated: (1) local necrotizing corrosions, (2) corrosion of the air passages by vapors, (3) toxic impairment of kidneys, liver and focal areas of fatty degeneration in the myocardium. The latent period after exposure has been ascribed to an anesthetizing effect. The author gives a brief history of a man aged 35 who had been exposed to dimethyl sulfate vapors in his place of work. Immediately after exposure he felt irritation of the eyes and flow of tears and shortness of breath. Later dyspnea, cough and nasal secretion appeared. The following morning rales were detected over both lungs, and the pharynx, nose and conjunctivas showed inflammation. Six weeks after the exposure the man still complained of palpitation and dyspnea on exertion. This raised the question of whether the changes in the heart or other changes were responsible. The literature reveals that even fatal dimethyl sulfate intoxications caused only slight toxic lesions in the heart. Dimethyl sulfate may attack the central nervous system. Respiratory paralysis has been known to result from it. In the case under consideration the intoxication may have caused a disturbance in the vasomotor regulation.

Revista Clínica Española, Madrid

11:237-304 (Nov. 30) 1943. **Partial Index**

*Investigation of Functional Renal Insufficiency in Addison's Disease. J. P. Lázaro, C. J. Díaz, F. L. Ruiz and M. T. Cantera.—p. 246.
Bronchial Asthma and Basal Metabolism: The Endocrine Factors in Pathogenesis of Bronchial Asthma. F. A. Rodrigues Nogueira.—p. 261.
Chronic Encephalopathy of Boxers. I. de Gispert Cruz.—p. 270.

Functional Renal Insufficiency in Addison's Disease.—Jimenez Días's concept that the chief biochemical derangement in Addison's disease is a deficiency in the deamination of amino acids by the kidneys was tested on 3 patients. After six days of salt free diet with administration of 6 Gm. of ammonium chloride in the last two days two twenty-four hour urine specimens were collected and p_H, free acidity, organic acids, chloride, sodium and ammonium determined. In 10 normal subjects the use of salt free diet and ammonium chloride was followed by high urinary excretion of chloride and ammonium, little change, if any, in sodium excretion, lowering in p_H and increase in free acid radicals in the urine. The acidosis elicited by administration of ammonium chloride was thus compensated for by excretion of acid radicals mainly in combination with ammonium. Sodium ion is retained in the organism preferentially to ammonium. Oppositely, in 3 cases of Addison's disease there occurred little change, if any, in ammonium urinary excretion, whereas sodium and chloride excretion were much increased. This was interpreted as an indication that, because of a deficiency in deamination, ammonium is not available for the excretion of acid radicals and the fixed base sodium takes its place. The increase in sodium urinary excretion was found to parallel the severity of Addison's disease, being pronounced in the severe cases and less so in the milder cases. This metabolic or functional renal insufficiency is not specific of Addison's disease, as shown by the finding of the same phenomenon in 1 case of chronic nephritis and in 2 cases of malignant hypertension.

Book Notices

Pharmacology and Therapeutics. By Maude B. Muse, R.N., A.M., Associate Professor of Nursing Education at Teachers College, Columbia University, New York. Fourth edition. Cloth. Price, $3. Pp. 633, with 83 illustrations. Philadelphia & London: W. B. Saunders Company, 1944.

This book should be as useful as the earlier editions for nurses, provided it is supplemented by adequate lectures and references. The drugs are grouped in an understandable way for the person who must appreciate the actions and uses of drugs without the benefit of detailed studies in physiology, medicine, pathology and other subjects such as the medical student receives. For example, preparations which stimulate the central nervous system are placed in one chapter, those affecting the gastrointestinal tract in another. Obviously there may be some difference of opinion where one or more agents properly belong, but any classification will result in misfits. At the end of each chapter is a list of questions for the nurse to use in evaluating what she has learned. The author's awareness of a nurse's responsibility in drug therapy is evident from the statement that a nurse should have knowledge and skill to enable her "to carry out the doctor's orders effectively, administer drugs efficiently, recognize significant effects on patients and report or record these effects intelligently." The contents of this book should aid many nurses in the pursuit of such objectives, although they will have to place their own interpretations on controversial, doubtful or misleading statements which may be found occasionally. For example, the author asserts that the antiseptics in favor today for hand sterilization are mercury bichloride, a mixture of chlorinated lime and sodium carbonate, and alcohol. Obviously these agents are not so favored as they were a few years ago. Further, no agent now available and found practical can be depended on to "sterilize" the hands. Elsewhere is a statement that the Council on Pharmacy and Chemistry "recommends" surgical solution of mercurochrome for preoperative preparation of the skin. The Council does not "recommend" in the true sense of the word; it examines with a view to determine acceptability, by virtue of compliance with certain rules, for inclusion in New and Nonofficial Remedies. Sometimes statements may be found which "date" the section; thus "penicillin (is) all reserved for military use." The author should avoid unnecessary details. Again, unnecessary emphasis is given to treatments not yet generally recognized; for example, the use of liver extract in the treatment of diabetes. Perhaps competent advice from physicians would remove such sources of complaint. Apart from such faults the book can be used by nurses with some confidence that the material is conservatively presented and, if supplemented by lectures and references, will help them in their studies. The index is complete.

Expectantly Yours: A Book for Expectant Mothers and Prospective Fathers. By Mario A. Castallo, A.B., M.D., F.A.C.S., Assistant Professor of Obstetrics, Jefferson Medical College, Philadelphia, and Audrey Walz. Boards. Price, $1.75. Pp. 110, with 16 illustrations by Helen G. Schad. New York: Macmillan Company, 1943.

This small book was written for the woman who wishes to understand the birth process and the medical care involved in the modern management of pregnancy and labor. It is written in an entertaining manner. It does not attempt to supplant the physician but provides sufficient information so that the patient can follow his instructions intelligently. Simple illustrations amplify the text. It can be read with profit by every mother or mother-to-be.

The Earliest Printed Book on Wine. By Arnald of Villanova, Physician, Surgeon, Botanist, Alchemist & Philosopher [1235?-1311] Now for the First Time Rendered into English and With an Historical Essay by Henry E. Sigerist, M.D. With Facsimile of the Original Edition, 1478. Cloth. Price, $10. Pp. 44, with portrait. New York: Schuman's, 1943.

Arnald of Villanova was a brilliant physician of the middle ages. He was educated in a Dominican school and wrote in "miserable Latin." He practiced in the school of Montpellier. There have been many previous editions of his writings in German and in other languages. The present text provides a reproduction of the first German edition and an excellent translation into English.

A National Health Service. Presented by the Minister of Health and the Secretary of State for Scotland to Parliament by Command of His Majesty, February 1944. Ministry of Health, Department of Health for Scotland. American edition reproduced photographically from the English edition. Paper. Price, 75 cents. Pp. 85. New York: Macmillan Company; London: His Majesty's Stationery Office, 1944.

This is the so-called medical white paper—a statement by the minister of health of Great Britain, Mr. Willink, on his proposals for a national health service. This has been well described in the London letter in previous issues of THE JOURNAL. British physicians themselves have indicated that the white paper deals a little largely with generalities and somewhat too little with the necessary details on which the proposed service may fall. Essentially the white paper encourages the establishment of districts in which medical service would be rendered by a hospital, a group of physicians practicing as a group, a health center and general practitioners who would be feeders to the practicing units. One finds here a great deal of the jargon of propaganda for social medicine. The system is referred to consistently as "free," whereas of course it is merely provided by a system of taxation whereby the government spends the worker's money for him instead of having him spend it for himself.

Æsculapius in Latin America. By Aristides A. Moll, Ph.D., Secretary-Editor of the Pan American Sanitary Bureau, Washington, D. C. Cloth. Price, $7. Pp. 639, with illustrations. Philadelphia & London: W. B. Saunders Company, 1944.

The author is at some pains to explain why he speaks of South America as Latin America, but he does not say why he called the book "Aesculapius in Latin America" instead of "Medicine in Latin America." Notwithstanding this somewhat too critical comment, the book is the most useful study of the growth and development of medicine in the Spanish and Portuguese speaking countries of America that has yet been made available. It required great study and immense reading as well as personal observation to assemble this useful book. The work is somewhat too profuse in the mere mention of great lists of names of competent workers; yet it serves at the same time to give a good over-all picture. The chapters on vital statistics, social security and distribution of physicians are to be especially commended. At a time when there is a far greater exchange of medical learning and scholarship between the American nations than ever before, this book will serve as a most useful introduction to our southern neighbors.

The Wounded Get Back. By Albert Q. Maisel. With a foreword by Ross T. McIntire, Rear Admiral, Medical Corps, U. S. N. Cloth. Price, $2.50. Pp. 230. New York: Harcourt, Brace and Company, 1944.

The exceptional privilege was accorded Mr. Maisel of six months in the South Pacific, traveling on hospital ships and in navy planes, visiting first aid stations and all types of navy hospitals. This experience he reflects fully, and he tells his story with rare narrative ability. Anecdotes and cases collected from officers and men lighten the text. Unfortunately there are no illustrations, whereas in the field discussed illustrations often tell far more to the reader than can be found in page after page of text. The book makes clear much of the recent application of military medicine, including, of course, burns, fractures, shark bites, dysentery, malaria and similar tropical troubles. Mr. Maisel's admiration for what the Navy has accomplished is unbounded, and there is hardly a hint of the inevitable failures that occur even under the best of circumstances.

The Clinical Value of Electrocardiography. By Irving J. Treiger, M.D., Assistant Professor of Medicine, University of Illinois. Foreword by James B. Herrick, M.D. Paper. Pp. 20, with 41 illustrations. Chicago: Presbyterian Hospital, 1944.

This atlas has the advantage of simplicity but the disadvantage of brevity. Its chief virtue, as pointed out in the foreword by Dr. Herrick, is that it places this method of study where it belongs: as a useful adjunct to the clinical examination. It may prove helpful to the student who wants a summary of the clinical application of electrocardiography; an important defect, however, is the lack of an account of precordial leads in general and their clinical application, as other precordial leads than the routine lead 4 sometimes establish the only clues to a clinical diagnosis. The booklet is simply and clearly printed aside from some defects in the reproduction of the illustrations, which are not always adequately inked, for example figure 39A.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

MENOPAUSAL BLEEDING AND ENDOMETRIAL CANCER

To the Editor:—**Patients with bleeding near or after the menopause are frequently referred to me. If the bleeding does not obviously come from the cervix in most instances I do a dilation and curettage and follow with about 1,500 milligram hours of radium. Of course if I know that there is a fundal cancer ahead of time, I advise surgery or, if the scrapings are suggestive of cancer at the time, I always get a biopsy and increase the radium, following with surgery. Recently one of my physician friends was rather upset because after I had given some radium to 1 of his patients she stopped bleeding for a while and then restarted. I told him that she would be all right, that this frequently happens and that the bleeding might not stop for six weeks or more. I also assured him that she had no cancer: she had a small, fairly firm, freely movable uterus with nothing suggestive of a cancer. I was not able to obtain a biopsy. He thinks this is a rather dangerous procedure and that I will overlook a cancer frequently this way and probably have overlooked one with this patient. I do not think so and have not got into any trouble previously. Please give me your opinion on this matter.**

M.D., Alabama.

ANSWER.—It is presumed that a thorough curettement was performed before the radium was inserted into the uterus to rule out cancer of the endometrium. If this was not done, it should be done without delay or, better still, a hysterectomy should be performed. If, however, the insertion of the radium was preceded by a thorough curettement, and microscopic examination failed to reveal carcinoma, it is safe to wait. Frequently there is one episode of bleeding, sometimes two after the use of radium for castration purposes. Generally such bleeding is in the form of a prolonged menstrual period, but seldom does it last for as long as six weeks. If bleeding should persist this long following radium treatment, it is best to remove the uterus. A carcinoma can be overlooked occasionally in spite of a curettement, and carcinoma can arise after radiation therapy. Better results are obtained by using 1,800 milligram hours rather than 1,500 milligram hours.

EFFECT OF TESTOSTERONE ON ADULT MEN

To the Editor:—**Is there any danger in the intramuscular injection of testosterone propionate? One of my colleagues told me that occasionally one gets an inhibition of the male hormone with just the opposite effect desired, namely the patient develops female characteristics. I have never seen this in the literature and wondered if there was any basis for it.**

M.D., Mississippi.

ANSWER.—The injection of testosterone propionate frequently depresses the activity of the seminiferous epithelium when given to normal adult men. While this effect is temporary as far as is now known, recovery on cessation of treatment may be slow. This property should be taken into account in any plan for protracted treatment. By feminization it is presumed that gynecomastia is meant. This is an occasional response to testosterone propionate but is not known to be progressive or troublesome. More substantial breast growth has been recorded with large doses of methyltestosterone. Whether the difference between the methyltestosterone and testosterone propionate in this respect is a matter of dosage or of inherent peculiarity of the drugs is not clear. No other response to either agent could be described by the term feminization.

Depression of intrinsic androgen production probably occurs, but any expressions of this are of course masked by the effects of the androgen given. Evidences of normal intrinsic androgen production in any individual, however, create a presumption against the usefulness of any androgen.

PRESERVATION OF SKIN GRAFTS

To the Editor:—**Please send me available information on delayed skin grafting; that is, grafting skin after it has been removed from the donor for twenty-four to thirty-six hours.** **Rembert Bayne, M.D., Selma, Ala.**

ANSWER.—Little has been written on the preservation of skin grafts for practical use up to the present time. A comprehensive digest by Davis can be found in Lewis's System of Surgery, volume 5, chapter 8, pp. 62-64. A paper read by Dr. Jerome P. Webster at the recent meeting of the American Surgical Association on "Refrigerated Grafts" will soon be published in the *Annals of Surgery*. This presents a simple technic and brings the subject up to date.

HERNIATION OF STOMACH INTO THORACIC CAVITY

To the Editor:—**A woman aged 63 has had postcibal gastric distress of a variable degree throughout most of her life. Four years ago an x-ray examination revealed that she had a herniation of approximately one third of her stomach up through the diaphragm into the thoracic cavity. This from all evidence was on a congenital basis. For the past four years the intractable pain from the postcibal muscular spasm has grown progressively worse in spite of conscientious efforts by correct diet, weight reduction, breathing exercises and upright position to alleviate the symptoms. The pain is so severe that it reflexly affects her heart (as well as some direct pressure) and her blood pressure (which is elevated at all times to an average of 160/100). Thorough examination with the electrocardiograph shows moderate change in the cardiac musculature but nothing serious at present. The pain has become so severe that recent attacks confine her to bed for several days. Advice has been received indirectly that some clinics have employed phrenicotomy in this condition with considerable success, especially in relief of the pain from the muscular spasm. Kindly advise as to specific references on this work as well as current medical opinion pro and con on this procedure for the condition in question.**

J. Kendall McBane, M.D., Alameda, Calif.

ANSWER.—Whether the herniation is of congenital origin or acquired makes little difference perhaps from a practical standpoint. The fact that nonsurgical measures have proved unsuccessful, that the patient's condition has grown progressively worse and that there is no valid contraindication to operation from the standpoint of the general condition would apparently justify surgical intervention.

There is, of course, a difference of opinion regarding the indications for and against phrenicotomy in the treatment of this condition. Surgeons with a large experience in this field do not advocate phrenicotomy when radical repair can be effected. Temporary interruption of the phrenic nerve by crushing is of value as a procedure preliminary to radical operative repair, especially in the surgical treatment of partial thoracic stomach resulting from congenital short esophagus. In cases in which reestablishment of function of the diaphragm is not desirable because of the danger of recurrence of the hernia, the paralysis can be made permanent by cutting or avulsing the phrenic nerve. Such procedure preliminary to radical surgery is also often of value in the treatment of incarcerated and strangulated hernias because it prevents spasm of muscle and causes relaxation of the hernia ring.

Phrenicotomy as the only procedure does not completely relieve the symptoms. However, with proper dietetic supervision such patients may get along fairly well. This procedure is not applicable to hernias in which a large portion of the stomach is in the thorax, causing pressure on the heart and lungs, nor is it applicable in any case in which the intestine is involved in the hernia. Should the patient refuse to submit to a major operation, temporary interruption of the phrenic nerve might be recommended in the hope that such a procedure would control the painful manifestations at least.

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Jones, C. M.: *New England J. Med.* **225**: 963 (Dec. 18) 1941.

ANESTHESIA FOR CESAREAN SECTION IN WOMAN WITH MYOCARDITIS AND RENAL DISORDER

To the Editor:—**What is the proper anesthesia to be used in cases of cardiorenal conditions? Several months ago I was asked to administer an anesthetic for cesarean section. The patient suffered from pronounced myocarditis and renal condition. Respiration was poor and the patient was rather cyanotic. The heart action was weak and irregular. The attending surgeon suggested local or spinal anesthesia. However, after discussion we decided on general anesthesia. Ethylene with a high percentage of oxygen and a small amount of ether was given. The operation was performed without mishap. The patient's condition was improved at the finish of the operation. Respiration and pulse were better. Oxygen was administered at the bedside. The patient and baby are doing well. I wish to know if the course pursued in this case was correct.**

Bernard Ploch, M.D., St. Louis.

ANSWER.—Choice of the anesthetic agent and method involves factors other than the patient's condition. One of the most important of these factors is the skill and judgment of the available anesthetist. Judging from the description of the case and the successful outcome of the operation for mother and child, the choice of anesthetic agent, the method of administration of it and the ability of the anesthetist were satisfactory.

Patients with cardiorenal disease should not be subjected to anoxia. While they tolerate small amounts of ether well, they may not tolerate large amounts of it. Ethylene is an excellent anesthetic agent for patients who are in poor condition if it is administered with a high percentage of oxygen. Spinal anesthesia was no doubt contraindicated in this case, although the patient might well have been operated on after infiltration of the line of incision with a local anesthetic agent. Using local anesthesia, the newborn child seldom needs as much attention or resuscitation as he does when cesarean section is done under

general anesthesia. The immediate postanesthetic administration of oxygen was good prophylaxis. Certain other anesthetic agents or methods, such as intravenous anesthesia and chloroform by inhalation, obviously are contraindicated in a case like this.

PROBLEMS OF MALE MATURATION AND ANDROGEN ADMINISTRATION

To the Editor:—Two youths aged 19 and 21 have recently requested information on the advisability of taking male sex hormone. The younger of the two is normal in every way, but his voice at times changes from its normal baritone to that of a preadolescent boy. In an attempt to keep his voice from changing he apparently strains his voice in talking to the point that he often loses it entirely. Repeated examination of his throat has failed to reveal any pathologic condition. His physique, distribution of body hair and mentality are all normal for a person of his age. The older boy has almost no beard, talks girlishly, tires quickly on attempting normal male sports, and acts, in his own words, "like a sissy." Except for the absence of a beard he appears physically normal in every way. Both these young men have a normal attitude toward their own and the opposite sex. There are apparently no homosexual traits in either of them. Since they are both entering medical school early in the coming year they are anxious to do something as soon as possible to get these "abnormal" conditions corrected. Would testosterone help these young men, and if it did would its effects continue after medication was stopped? If indicated, what size dose should be given and how often? Any suggestions about the handling of these cases would be appreciated.

M.D., Virginia.

Answer.—There is no information as to the effect of androgens in further deepening or stabilizing the voices of men with normal sex function. While it is possible that some larynxes require a concentration of androgens higher than that provided by normal intrinsic androgens to effect puberal changes, such a phenomenon is as yet undescribed. The fact that a baritone voice is present at times in this subject suggests that the full puberal impulse has been given to the larynx and that more help might come from voice training than from androgen therapy. If such training is ineffective, however, and the matter is of serious importance, testosterone propionate could be given for a period of two to three months. In this event the sperm content of the semen should be followed. The writer would hesitate to see any profound depression of spermatogenesis protracted over any period longer than two to three weeks, although he recognizes that others might well take such an influence less seriously in view of the recovery of spermatogenesis normally made on cessation of androgen administration. Any effect on the voice would in all likelihood be sustained to a large extent after treatment was stopped. The difficulty is more likely to lie in getting any effect.

The second boy similarly presents a difficult problem. Maturation of beard hair is usually slow in some normal men and may never exceed scanty amounts. Beard hair in the hypogonad male responds slowly to testosterone propionate and other androgens, and even after months of treatment the yield may be surprisingly meager. Assuming that the testes are normal in the patient in question and are forming spermatozoa properly, protracted treatment with testosterone with its depressing action on the testes should not be risked to secure greater beard growth. "Girlish behavior," even when associated with latent or overt homosexuality, is not readily influenced by the androgens. If the matter is serious, psychiatric care should be sought. Physical inefficiency in this boy might better be dealt with by systematic physical training than by androgens. If reexamination leads to any evidence for mild or partial testicular insufficiency better than that already described the answer would be modified accordingly.

SULFONAMIDES AND HEPATIC DAMAGE

To the Editor:—I have been recently called on to treat a patient for acute cholecystitis with obstructive jaundice of one month's duration due to choledocholithiasis. The patient was unsuitable for operation because of poor cardiac function. At present she has fever ranging from 103 to 104 F. There was sharp disagreement about the use of sulfonamides in such a case, some feeling that they might be too hepatotoxic. What is the present status of this problem?

M.D., New York.

Answer.—It is now generally agreed that the sulfonamides on rare occasions may provoke clinical evidence of hepatic damage. This refers particularly to the occurrence of a toxic hepatitis with jaundice. However, when careful liver function studies have been employed in studying this problem it has been revealed that liver dysfunction was not uncommonly induced by sulfonamide therapy. Watson and Spink in a study of 110 patients receiving sulfanilamide observed that the usual therapeutic doses of sulfanilamide were often associated with some evidence of dysfunction of the liver such as urobilinogenuria, elevation of the serum bilirubin or outspoken jaundice. In fact, 16 patients were observed to have jaundice as a result of therapy with sulfanilamide. This incidence is higher than usually recorded and may be due to the individual cases selected for treatment. It is of some interest that a lower incidence of jaundice was noted among patients receiving sulfapyridine. Similar observations were made by Kapnick, Stewart and Lyons, who found a decrease in plasma prothrombin as one of the earliest signs of impending hepatic failure resulting from sulfonamide therapy.

While sulfonamide therapy may cause hepatic dysfunction or less frequently severe damage to the liver, this should not deter any physician from administering sulfonamides when there are clearcut indications for their use. It is believed that sulfadiazine and sulfamerazine are less toxic for the liver than sulfanilamide. There is some evidence that one must be particularly cautious before initiating treatment with a sulfonamide when severe hepatic insufficiency is already present. Even in such cases sulfonamide therapy is warranted when an infection amenable to such treatment is present. This leads up to the question of inaugurating sulfonamide therapy in a patient with an obstructive type of jaundice due to a stone in the common bile duct. Such patients often have hepatic dysfunction and morphologic changes in the parenchyma of the liver. A cholangitis is not uncommon. Sulfonamides, administered orally or parenterally, are excreted into the bile. On the other hand, such treatment is often accompanied by disappointing results. The nature of the infection precludes successful therapeutic results because of the presence of pus, detritus and dead micro-organisms which inhibit the action of the compounds. Not infrequently Escherichia coli is the predominating species of bacteria present, and some strains are notoriously resistant to the antibacterial action of the sulfonamides. In conclusion, a physician may face the problem of administering a drug that may accentuate hepatic dysfunction and in most instances fail to effect the clinical course of the disease, namely infection associated with choledocholithiasis.

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THERAPY OF UNDULANT FEVER

To the Editor:—A case of undulant fever of short duration (to the best of my knowledge about six weeks) fails to respond to vaccine or sulfonamide therapy. Chills, fever (from normal to 100 F. in the morning to 104.5 F. in the afternoon) and severe diaphoresis persist. The vaccine, has been given in 1 cc. doses every third day. So far I have not increased the dose. Sulfathiazole caused nausea and vomiting, sulfadiazine caused headache and sulfanilamide caused severe urticaria, all being given in 1 Gm. doses four times a day. These reactions appeared in thirty-six to forty-eight hours. Sulfadiazine was kept up for three days in spite of headache without any change in the temperature. I have started sulfanilamide again in 0.32 Gm. doses three times a day to see if the urticaria was really due to the drug or to some food allergy. The sulfonamides were accompanied by sodium bicarbonate. Do you have any suggestions?

H. Y. Fredrick, M.D., Westfield, Wis.

Answer.—It is difficult to see why vaccine therapy should be of any definite benefit in a case of acute brucellosis of only six weeks' duration. On the other hand, sulfonamide therapy when given in adequate doses for a period of several days has been associated with a termination of fever and the eradication of a bacteremia. Obviously, a correct diagnosis must have been established prior to therapy. This statement is made in view of the fact that, of all the infectious diseases, brucellosis constitutes an infection the diagnosis of which is difficult to establish with certainty unless the organisms have been isolated from the tissues or body fluids.

Favorable therapeutic results in some acute cases have been obtained with any one of the commonly used sulfonamides. Since the patient under discussion appears to tolerate sulfadiazine reasonably well, except for the headaches, this drug may be given in doses so that a blood concentration of at least 10 mg. per hundred cubic centimeters is maintained for at least two weeks. This will usually require an initial dose of 4 Gm. and then 1 Gm. every four hours day and night. In addition, a total of 12 to 15 Gm. of sodium bicarbonate may be given during a twenty-four hour period with an intake of fluid, so that the twenty-four hour output is 1 liter or more. If smaller doses of a sulfonamide are used, such as 0.32 Gm. of sulfanilamide three time a day, there is the possibility that the patient will receive no benefit and that the organisms will become sulfonamide resistant.

If the patient progresses into a chronic illness, without benefit from sulfonamide therapy, artificial fever therapy may be indicated with the use of one of the standard cabinets.